October 9, 1995 Section 2 of 2

COMPUTERWORLD

The Premier 100

THE MOST EFFECTIVE COMPANIES AT MANAGING INFORMATION

CHARLES E. PERUCHINI,
director of IS
at top-ranked
Superior Industries
International, Inc.

REVVING UP INFORMATION PRODUCTIVITY THROUGH

RE-ENGINEERING • OUTSOURCING • CLIENT/SERVER

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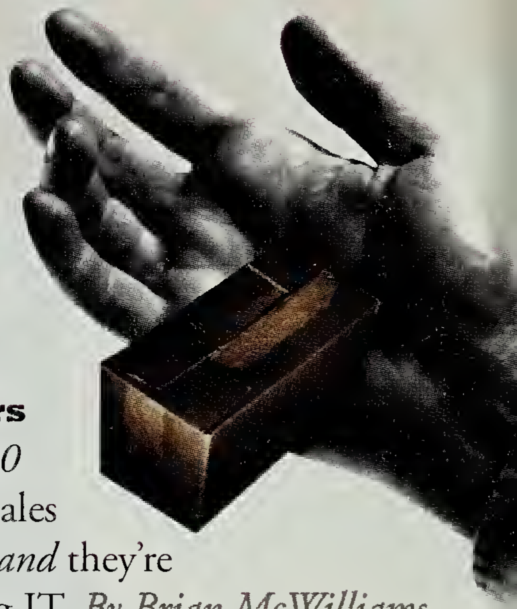

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Photography (Left) by Alan Levenson, (Top) by Daniel Levin

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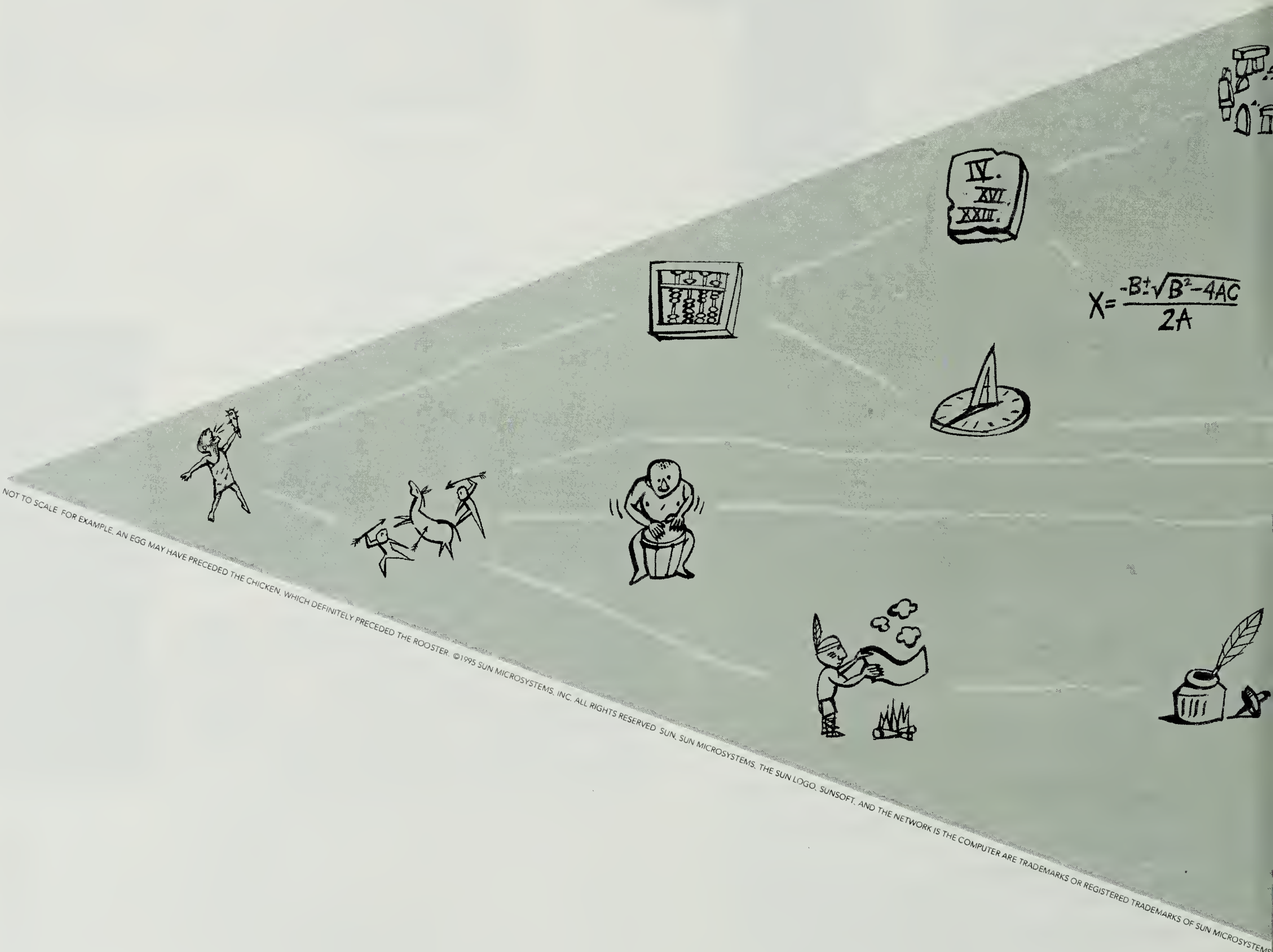

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We have seen the future and his name is Network.

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Network

The Premier 100

Companies are listed by ranking within each industry

Apparel, Textile & Furniture
- Galey & Lord, Inc.
- Chromocraft Revington, Inc.
- St. John Knits, Inc.

Chemical Manufacturing
- Great Lakes Chemical Corp.
- Ethyl Corp.
- ARCO Chemical Co.

Diversified Services
- HealthCare Compare Corp.
- First Data Corp.
- Kinetic Concepts, Inc.
- CBS, Inc.
- Equifax, Inc.

Electric & Gas Services
- AES Corp.
- Destec Energy, Inc.
- California Energy Co.

Electronic & Electric Equipment
- BMC Industries, Inc
- Vicor Corp.
- Solectron Corp.

Financial Services
- Mercury Finance Co.
- Western National Corp.
- John Nuveen Co.
- Green Tree Financial Corp.
- Morgan Keegan, Inc.
- The Bear Sterns Cos.
- The Equitable of Iowa Cos.
- Boston BanCorp
- A.G. Edwards, Inc.
- T. Rowe Price Associates, Inc.
- Valley National Bancorp
- Morgan Stanley Group, Inc.
- Progressive Corp.
- The Charles Schwab Corp.
- Charter One Financial, Inc.
- Arthur J. Gallagher & Co.

Food & Beverage
- The Coca Cola Co.
- Wm. Wrigley Jr. Co.
- Cagle's, Inc.
- Anheuser-Busch Cos.
- Campbell Soup Co.

Food Services
- Outback Steakhouse, Inc.
- International Dairy Queen, Inc.
- McDonald's Corp.
- Applebee's International, Inc.

General Building Contractors
- Champion Enterprises, Inc.
- Toll Brothers, Inc.

Health Services
- United HealthCare Corp.
- U.S. Healthcare, Inc.
- Health Management Associates
- Vencor, Inc.
- Express Scripts, Inc.

Manufacturing
- UST, Inc.
- Chase Brass & Copper Co.
- Adams Resources & Energy, Inc.
- International Game Technology
- Medusa Corp.
- Southern Energy Homes, Inc.
- WMS Industries, Inc.
- Fossil, Inc.
- Int'l Flavors & Fragrances, Inc.
- CMI Corp.
- Electroglas, Inc.
- Arrow International, Inc.
- Worthington Industries, Inc.
- Rubbermaid, Inc.
- Martin Marietta Materials, Inc.
- Sunbeam-Oster Co.

Paper & Paperboard
- Louisiana-Pacific Corp.
- Wausau Paper Mills, Co.
- Caraustar Industries, Inc.

Pharmaceuticals
- Alza Corp.
- Mylan Laboratories, Inc.
- Amgen, Inc.
- Abbott Laboratories
- Merck & Co.
- American Home Products Corp.
- Schering-Plough Corp.
- Bristol-Myers Squibb Co.
- Eli Lilly & Co.

Printing & Publishing
- Marvel Entertainment Group, Inc.
- Gannett Co.

Recreational Products & Services
- Carnival Corp.
- King World Productions, Inc.
- Topps Co.
- Royal Caribbean Cruises Ltd.

Transportation & Industrial Equip.
- Superior Industries Int'l, Inc.
- Wabash National Corp.
- Clark Equipment Co.
- Cooper Tire & Rubber Co.
- Breed Technologies, Inc.
- Masland Industries
- Stewart & Stevenson Services, Inc.
- Supreme Industries, Inc.

Transportation Services
- Arnold Industries, Inc.
- Illinois Central Corp.
- Norfolk Southern Corp.
- Rollins Truck Leasing Corp.
- Swift Transportation Co.

Wholesale/Retail
- TBC Corp.
- Nine West Group, Inc.
- Ellett Brothers, Inc.
- Audiovox Corp.

INFORMATION MANAGEMENT, NOT INFORMATION TECHNOLOGY, IS THE KEY TO SUCCESS FOR COMPUTERWORLD'S PREMIER 100

BY BRUCE RAYNER

Management matters

Take a close look at the list on the facing page.

The 100 companies listed here are some of the best managers of information in the country.

As expected, there are a number of recognizable big names in virtually every industry: Merck & Co. in pharmaceuticals, The Bear, Stearns Cos. in financial services and McDonald's Corp. and Coca-Cola Co. in food and beverages, to name a few. In all, 36 billion-dollar companies made it onto the *Premier 100* list, 19 of which are in the *Fortune 500.*

While you might expect to see more large corporations in the *Premier 100*, big is not always better. Indeed, companies with sales below $1 billion make up the bulk of the list. Of the Top 10 companies on the list, seven have sales below $750 million. In all, 14 companies on the

Continued on page **8**

Illustration by Joe Fleming

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Premier 100 list have sales below $200 million. (For a look at the small vs. large issue, see "Information Entrepreneurs" on page 20.)

Why such a wide bandwidth in company size? Because the *Premier 100* attempts to capture a company's ability to manage information, not the size of its information systems budget.

Re-engineering

Among Premier 100 companies surveyed, retraining (57%) and employee resistance to change (50%) are the biggest obstacles to successful re-engineering projects. But despite the risks, 93% are doing some form of re-engineering. See page 32.

PRODUCTIVITY PARADOX

A company can spend huge sums on IS and still not improve its business performance. Indeed, the direct connection between IS spending and productivity (additional output derived directly from an investment) in the aggregate has proved illusive. Known as the "productivity paradox," the connection between IS spending and increased output still inspires heated debate.

Even establishing a link between technology breakthroughs and productivity improvements is tenuous. Just look at the timeline at the bottom of this page. With productivity leveling off in the mid-1970s, a causal relationship between technology and productivity would be hard to defend.

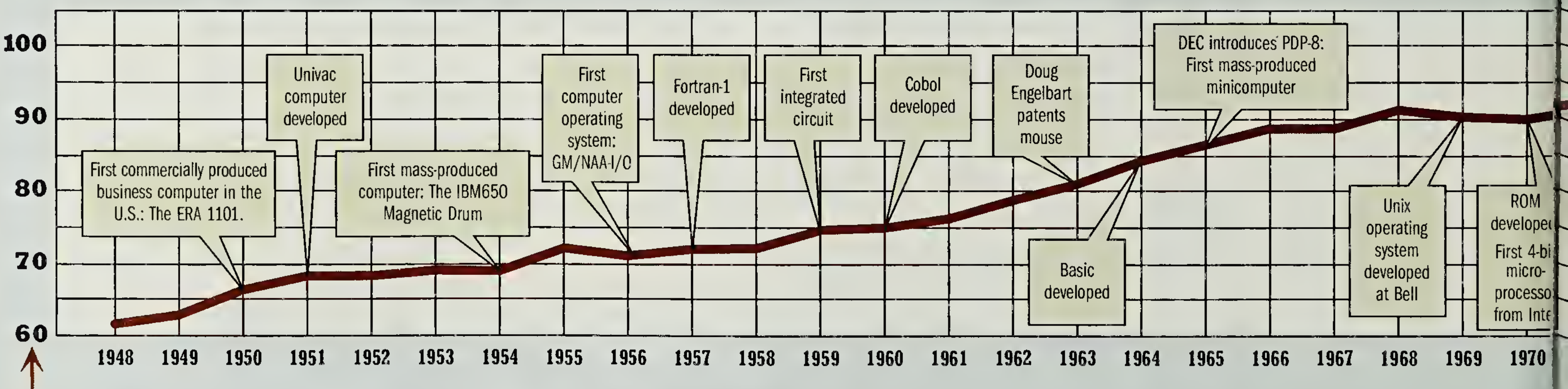
Of course, there's a difference between productivity at the macroeconomic level and productivity at the company level. For the economy, myriad other factors must be taken into account, such as the general health of the economy and political machinations. At the company level, these things play a role, but to a lesser extent. Again, productivity depends not on the size of the IS budget or whether a company uses state-of-the-art technology, but on how the company manages information and information technology.

For a lesson in management savvy, consider Superior Industries International, Inc., this year's top-ranked *Premier 100* company. Hardly a household name, the $456 million Van Nuys, Calif.-based maker of alloy wheels has been growing at 15% per year for the past few years as a result of some very lucrative deals with the big auto makers. (For details see "Superior Performance" on page 12.)

Admittedly tightfisted, Superior spends very little on information technology, typically less than one-half of 1% of gross sales. But what the company does spend, it spends wisely, according to E. Jane Sinemma, an analyst at Kemper Securities Equity Research in Chicago.

Sinemma cites Superior's investment in IT as typical of its "outstanding management team and keen strategic vision." Superior's recent expansion in data-processing capability "supports Superior's intensive efforts to make its own processes even better," she says.

What's the connection between productivity



Combined labor and capital productivity index for the nonfarm business sector, base year 1987

NUMBER CRUNCHING

Superior is in the middle of the road when it comes to IS spending among the *Premier 100*. In aggregate, the 100 companies spend an average of 2.6% of revenue on IS. What's more, their IS spending was up a significant 12.8% this year. (By comparison, a 1995 CSC Index survey of 640 companies in North America found that IS spending averaged 2.1% of revenue, and the average annual increase in spending was 4.6%.)

Client/Server

The complexity of the multivendor environments (57%) and the lack of trained personnel (55%) are the most serious problems Premier 100 companies face as they implement client/server. See page 27.

Of the 18 industries represented in the *Premier 100*, the manufacturing sector spent the most on IS last year, averaging 8.9% of revenue. Financial services, too, is a relatively big spender, averaging 6.4% of revenue spent on IS. On the other end of the spending spectrum are building contractors, which spent a meager 0.2% of revenue on IS.

As for growth, building contractors posted the highest year-to-year growth in IS spending: 38%. This might be explained by the relatively strong growth of the economy and the corresponding strength in the construction sector. Following close behind is the food-service sector, with a growth rate of 21%. Health services and pharmaceuticals, both fiercely competitive industries, tie for third with a growth rate of 18%.

WHERE THE MONEY GOES

Of course, IS spending and spending growth say nothing about who spends the money and how it is spent.

Outsourcing

Most Premier 100 companies surveyed say they opt for outsourcing because it gives them access to additional resources (52%) and expertise (50%). See page 35.

Despite talk of decentralizing the IS function, IS budgets at the *Premier 100* companies remain centrally controlled. In all, 79% of IS spending is managed by centralized corporate IS managers, while 13% is controlled by divisional or functional IS managers. Only 8% of the aggregate IS budget is managed by non-IS managers.

Few companies on the list stray from the norm, with the notable exception of second-ranked AES Corp., which lets non-IS managers control 80% of IS spending. (See "The Rest of the Best" on page 16.)

As for how the money gets spent, virtually all *Premier 100* companies spend something on business process re-engineering, client/server and outsourcing. Overall, 27% of all money spent on re-engineering goes to IS. In some industries, such as printing and publishing, transportation services and recreational products and services, the figure rises above 70%. (See "Revamp Champs" on page 32.)

Likewise, the vast majority of *Premier 100* companies spend significant IS dollars on client/server technology and outsourcing. On average, 20% of their IS budgets goes to

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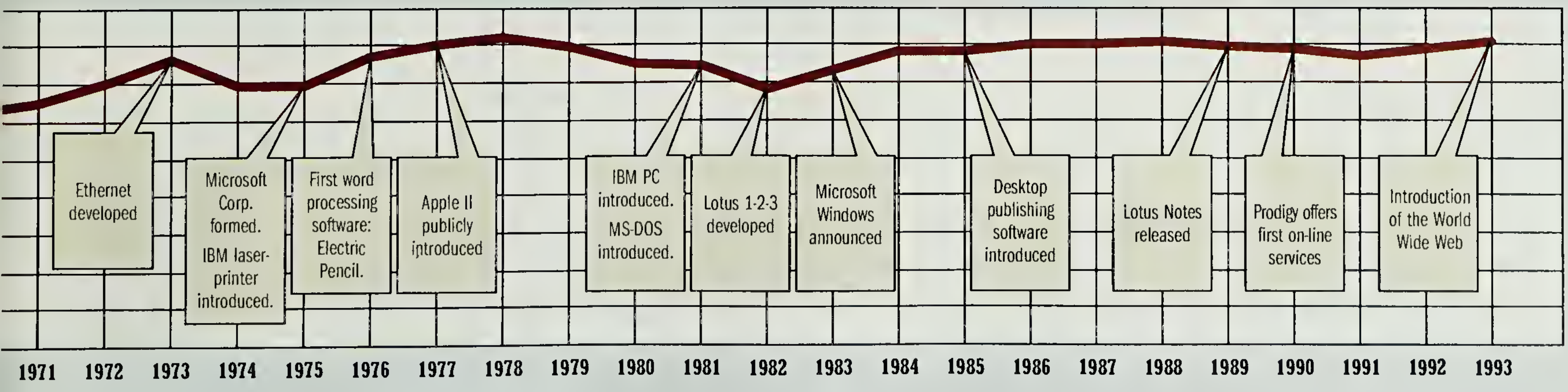
nd technology?

Since 1977, productivity has leveled off, despite rapid technological advancements. In the aggregate, there appears to be no connection. At the company level, the connection depends on management.



Source: Productivity index: U.S. Bureau of Labor Statistics, Department of Labor; Timeline facts: *Computerworld* and TechKnowlogy, Inc. Compiled by Amy Malloy, *Computerworld* intern.

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client/server projects, while 10% goes to outsourcing contracts. Spending is up this year for both client/server and outsourcing by 45% and 22%, respectively.

Big client/server spenders include No. 63 Ethyl Corp., which spends 90% of its IS budget on client/server, and No. 91 Solectron Corp., which spends 60%.

Companies with sales below $500 million spend slightly more on average on client/server than larger companies: 21% vs. 19%. One explanation could be that smaller companies are more willing to go the client/server route because they have less to lose by replacing legacy systems. (See "No Pain, No Gain," on page 27.)

As for outsourcing, there is a clear spending differential between large and small companies. Companies with sales below $500 million spend an average of 15% of their IS budgets on outsourcing, while companies with sales over $1 billion spend 8%. (See "Make or Buy?" on page 35.)

HUMAN CAPITAL

Not surprisingly, spending on re-engineering, client/server and outsourcing are driven by the same thing: the need to tap human capital for competitive advantage.

The number one benefit of re-engineering identified by the 56 *Premier 100* companies surveyed was improved decision making (read: increased management productivity.) For client/server, the number one benefit was the increase in end-user autonomy (read: increased business-unit productivity). And for outsourcing, the most commonly mentioned benefit was access to additional resources and expertise (read: increased IS department productivity).

Likewise, the biggest impediments to success cited by survey respondents were people-related issues: retraining in the case of re-engineering and a lack of trained personnel in the case of client/server.

The message is clear: Without the right people to manage IS, even the best-laid business plans will die on the vine. That's what distinguishes the *Premier 100* from the also-rans. The *Premier 100* are adept at managing the people who manage the information, which in turn creates value. **100**

Rayner is *Computerworld's* editor of special projects.

How we rank the Premier 100

Computerworld's ranking of the *Premier 100* is based on a three-year moving average of IS Consultant Paul Strassmann's Information Productivity Index (IPI). A more refined measure than IT spending or installed base, the IPI measures a company's effectiveness at managing information.

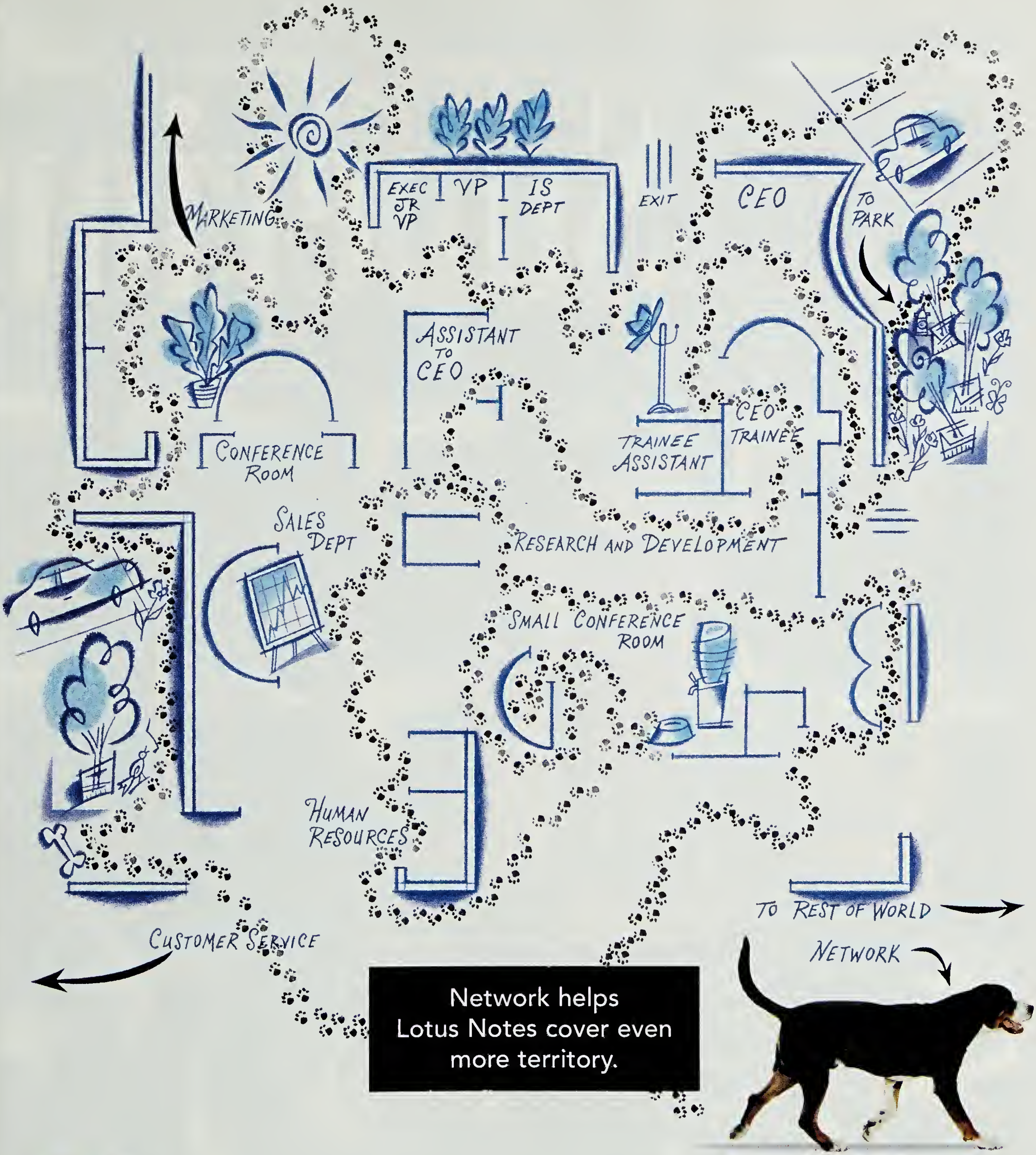
The IPI is like any productivity measure in that it has an output in the numerator and an input in the denominator. The output measures management's contribution to the company, namely its economic value-added (EVA); either Stern, Stewart & Co.'s EVA or the numerator in the formula below. The input represents the management cost of doing business. Unlike last year, this year's denominator included research and development costs because R&D is considered a significant management cost of doing business.

Also new this year, *Computerworld* used a three-year moving average of the IPI to rank the *Premier 100* instead of a single-year figure. This is because some firms show wide swings in profit from year to year. Any company with a significant negative IPI in fiscal year 1992, 1993 or 1994 was excluded from consideration as was any company that reported both favorable operating profits after taxes and large accounting write-offs. In addition, to qualify for the list, companies had to have a fiscal year 1994 IPI of 0.20 or greater.

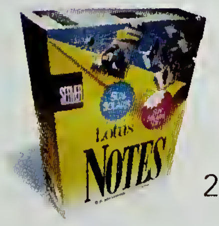
Computerworld considered companies with sales of more than $100 million for inclusion. However, if a company was unwilling to provide detailed IS information, *Computerworld* reserved the right to exclude it from consideration. All data used to calculate the IPI are publicly available.

$$\frac{\text{Operating profit after tax - (Shareholder equity x Cost of capital*)}}{\text{Sales, general and administrative costs + Research and development expenses}}$$

*COST OF CAPITAL: 1992: 11.3%, 1993: 10.4%, 1994: 11.8%



Network helps Lotus Notes cover even more territory.



Now, every SPARCserver™ system comes bundled with Lotus Notes,® the groupware standard. And that means more people can access, track, and share information than ever before. In fact, a single SPARCserver can currently support up to 250 Lotus Notes users. But industry-leading scalability isn't the only reason to build a global Lotus Notes infrastructure with SPARCserver systems. They support TCP/IP and SPX protocols, so you can run Lotus Notes applications across Windows, NT, Macintosh, OS/2, and UNIX platforms. You also get the mission-critical reliability that has made SPARC the best-selling RDBMS platform. Find out more. http://www.sun.com or 1-800-786-0785, Ext. 325.

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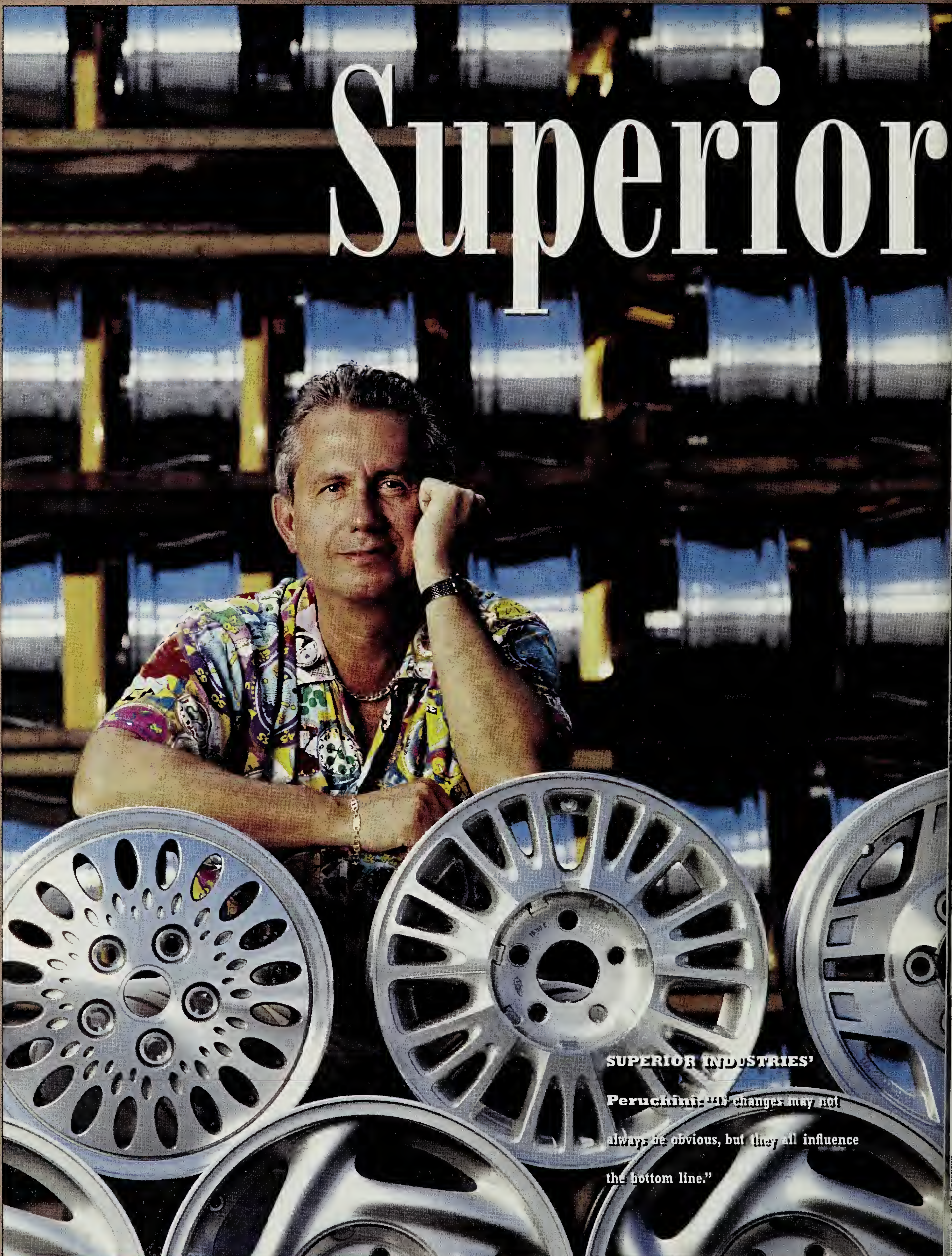

SUPERIOR INDUSTRIES' Peruchini: "IS changes may not always be obvious, but they all influence the bottom line."

THE TOP FIVE

performance

IN THE FAST LANE, THIS YEAR'S NUMBER 1 PREMIER 100 COMPANY EXCELS WITH MINIMAL IS INVESTMENT

BY ALAN R. EARLS

Square one.

That's where **Superior Industries International, Inc.**'s director of information systems, Charles E. Peruchini, says he began when he joined the top-ranked *Premier 100* company back in 1989.

"It was the best of times, and it was the worst of times," Peruchini says with a laugh.

It was the best of times because the Van Nuys, Calif.-based company was riding the crest of the alloy wheel wave. Shipped on only 4% of new cars in the U.S. in 1980, today alloy wheels are standard equipment on 40% of domestic cars and light trucks, says Jeff Ornstein, chief financial officer. Superior, which makes the lion's share of these wheels, as well as a number of other accessories for the auto market, has seen revenue rise dramatically, nearly doubling from $267 million in 1990 to $456 million last year. Net income has more than quadrupled from $12 million to $56 million over the same five years.

Number 1

From one small plant in Van Nuys, Superior has built a string of newer and larger plants, mostly across the Midwest,

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Photograph by Alan Levenson

Continued from page **13**

over the past decade. Today, the company can produce some 12 million wheels a year compared with fewer than 8 million at the beginning of the decade. "With all the different models we produce, we operate normally at about 80% of our theoretical capacity," Ornstein says.

Soon a new Superior plant in Hungary will begin to serve the European market, he adds. Worldwide employment has risen from 2,000 in 1990 to 5,000 today.

> **"We definitely believe we are doing a lot with a little, and we are proud of it."**
>
> **CHARLES PERUCHINI**
> **Director of IS**
> **Superior Industries International, Inc.**

It was the worst of times because Superior's various functional areas and geographical locations were operating incompatible and arguably inadequate information systems. The bottom line: The alloy wheel market leader's IS infrastructure was ill-equipped to deal with growth.

During the 1980s, Peruchini's predecessors had acquired a string of IBM mainframes culminating in an IBM 4300. The machine handled payroll, billing, orders and general ledger tasks. "Everyone in IS thought things were fine," Peruchini says.

However, the folks in manufacturing thought differently. Peruchini recalls one meeting with manufacturing executives in which everyone took turns bashing IS for poor support. Peruchini used the meeting as a forum to clear the air and to reestablish respect for IS.

Not that there weren't legitimate gripes, he admits. "Areas like manufacturing had gotten tired of waiting for answers from IS, so they had gone off and built their own systems on stand-alone PCs," he explains.

For Peruchini, a veteran of Beatrice Foods, the balkanization of his domain added to the problems he was finding within the department itself — in particular an aging suite of software from the 1960s and 1970s. "We had an order-entry system custom developed by Arthur Andersen," Peruchini says, "but it turned out no one understood or knew how to use much of its functionality."

In some manufacturing plants, he notes, there was almost no computerization at all. Often plant managers got by with one or two stand-alone PCs to handle basic accounting tasks. In short, Peruchini had inherited an operation with no cohesive IS strategy.

WINNING SUPPORT

Fortunately for Peruchini, few managers in the company were opposed to change. It helped, too, that early in the process Peruchini was able to get the support of company founder and chairman, Lou Borrick. A tight-fisted, bottom-line manager, Borrick appreciated the efficiency implications of an improved IS system.

In the early days, Peruchini prepared to do battle with Borrick to defend his plans for investing in IS. At one pivotal meeting in August 1991, Peruchini warned of Superior's islands of automation and argued that without a stronger IS infrastructure, the company's robust growth could be stopped cold. For dramatic effect, Peruchini showed Borrick a photograph of the piles of paper that stood outside his office — monuments to incompatibility and inefficiency.

Superior Industries International, Inc.

1994 revenue:	$456M
1994 net income:	$56.3M
Total employees:	5,000
IS employees:	11
IS spending as % of revenue:	0.5

Impressed, Borrick gave Peruchini the go-ahead to develop and plan for the introduction of an AS/400, but, "I made sure he understood that without other changes, just getting the new computer wouldn't accomplish much," Peruchini says.

One of Peruchini's goals was to enhance communication across the company, which now included three satellite plants, while laying the groundwork for an efficient, expandable IS system.

"From 1991 to the present we ended up spending just under $2 million on new equipment and software," Peruchini adds. Furthermore, all IS expenditures annually total less than one-half of 1% of gross sales. "If we ever had 1% to spend, I just don't know what we would do," he says jokingly.

BUILDING BLOCKS

In January 1992, the AS/400 arrived along with BPCS — Business Planning and Control System software sold by Systems Software Associates, Inc. in Chicago. This was the beginning of a system that came to include some 400 PC clones, color printers, electronic data interchange (EDI), bar coding and applications such as Lotus Development Corp.'s 1-2-3 and Bloc Publishing's FormTool. At each step Peruchini maintained buy-in from Borrick and showed him he was focused on the company's financial performance goals — not on an IS-generated fantasy.

"Our plan was to get our foot in the door at each location starting with accounting functions and then later add things like the tool crib and shipping and receiving," he explains. PCs would be the shock troops, and the AS/400 would provide the raw processing power. But, Peruchini notes, critical systems in some of the plants operating on Intel Corp. 8088 PCs started to break down under the pressures of growth.

While they waited for someone to come in and fix the machines, the accounting and purchasing functions could be out of commission for as long as two days, Peruchini says. What's more, the pace of business expansion, averaging about 15% a year, kept his people busy with the 4300. Faced with the choice of either hiring more people to maintain legacy systems or moving implementation plans forward more rapidly, Peruchini chose the latter.

By the end of 1993, Peruchini says, the transition to the AS/400 was complete, and the 4300 had been unplugged.

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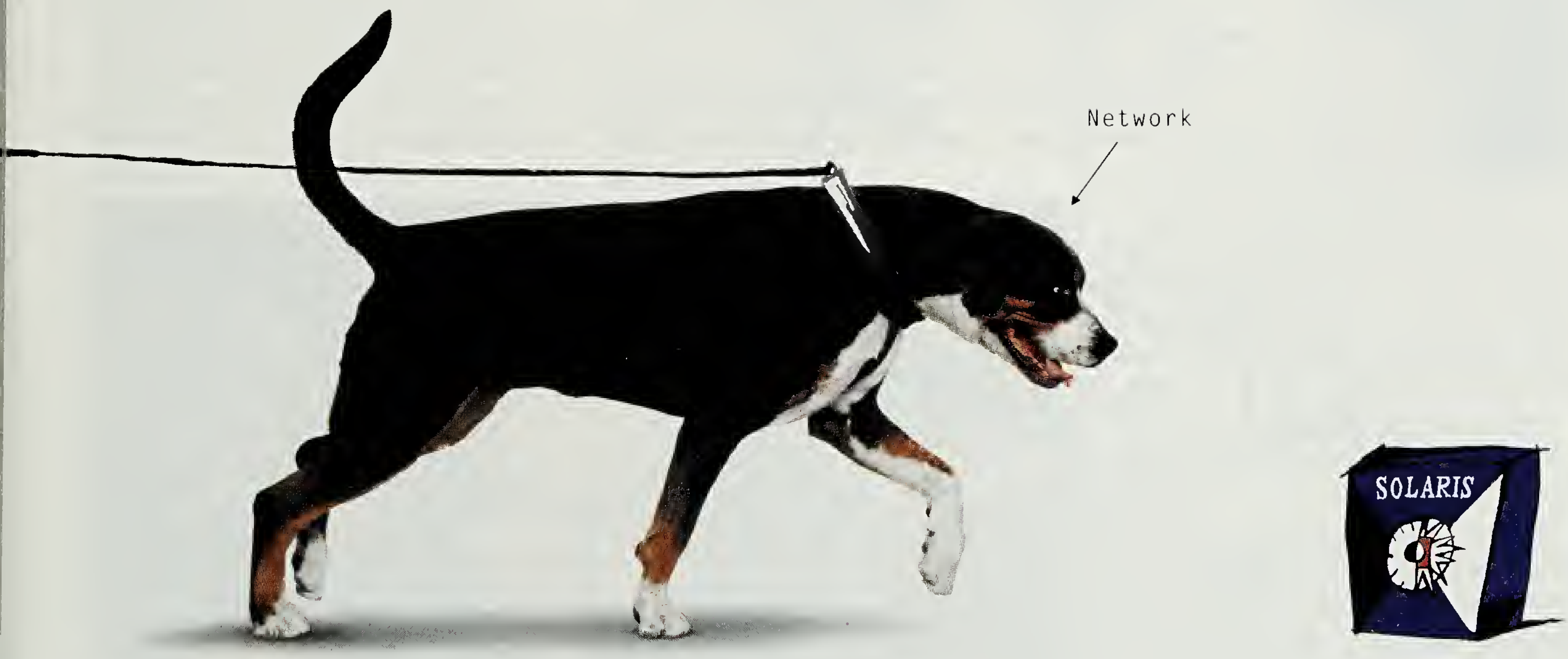

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Sun
THE NETWORK IS THE COMPUTER™

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Continued from page 14

Also, a first-generation electronic-mail system was running on two leased lines linking all the plants. Early this year, the leased lines were replaced by IBM's Advantis, a proprietary communications service. "That's been really good for us," Peruchini says. "It gives direct E-mail access to companies like Ford and may even tie us with the Hungarian plant."

The E-mail system supports a new document imaging system that will make "all quality and engineering documents available to everyone in the company at the same time," Peruchini says. Best of all, though, "IBM will keep us upgraded on new technology, and I won't have to hire any communications specialists."

Peruchini says the principal impact of the improvements in IS at Superior hasn't always been obvious, but all changes affect the bottom line. For instance, sales to the automobile aftermarket through retailers represent only about 10% of business and require faster response, smaller lots and other special treatment that is not as crucial in volume-oriented sales to the Big 3 auto companies. Peruchini says IS helps integrate those requirements as efficiently as possible.

Doing business electronically is no longer optional in the automobile industry, he adds. "Our customers demand EDI," he says, "and being able to trace a lot through bar coding is also increasingly standard practice."

Financial analysts agree. "Particularly with respect to process-control activities and cost information, I would say Superior is definitely a state-of-the-art company," says Joseph Phillipi, senior vice president at Lehman Brothers, Inc. in New York.

"Superior has always had a good sense of what is going on out on the shop floor," Phillipi says, "but nowadays companies need daily, moment-to-moment access to information." That's particularly true, he adds, in the automobile industry, where the Big 3 "are always looking for additional price givebacks."

Looking back on six years of change, Peruchini says of his 11-person IS organization: "We definitely believe we are doing a lot with a little, and we are proud of it." ●

[illegible] **Earls** is a freelance writer based in Franklin, Mass.

The Rest

THE TOP FIVE

AES Corp.

ARLINGTON, VA.

Number 2

To say that information systems activities are decentralized at AES Corp. is something of an understatement. In fact, the company devotes just two full-time employees to IS; all others are asked to manage and police their own systems.

One of the largest independent power producers in the world, AES designs, builds, owns and operates electric power plants and sells electric power to utilities. Currently, it operates six plants in the U.S. and three abroad. Another five plants outside the U.S. are under construction.

Andrea Stanley-Miller and Brett Galura are AES's IS representatives. If pressed for traditional titles, they reluctantly offer director of computer services and LAN administrator, respectively. But they prefer being called computer consultants, which is

ANDREA STANLEY-MILLER, director of computer services at AES: IS functions like a consultant for internal customers at the power company giant.

Photograph by Katherine Lambert

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23. Dir./Mgr. Sys. Development, Systems Architecture
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41. Engineering, Scientific, R&D, Tech. Mgt.
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13. Treasurer, Controller, Financial Officer

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KATHLEEN
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AES Corp.

1994 revenue:	$533M
1994 net income:	$100M
Total employees:	680
IS employees:	2
IS spending as % of revenue:	0.1

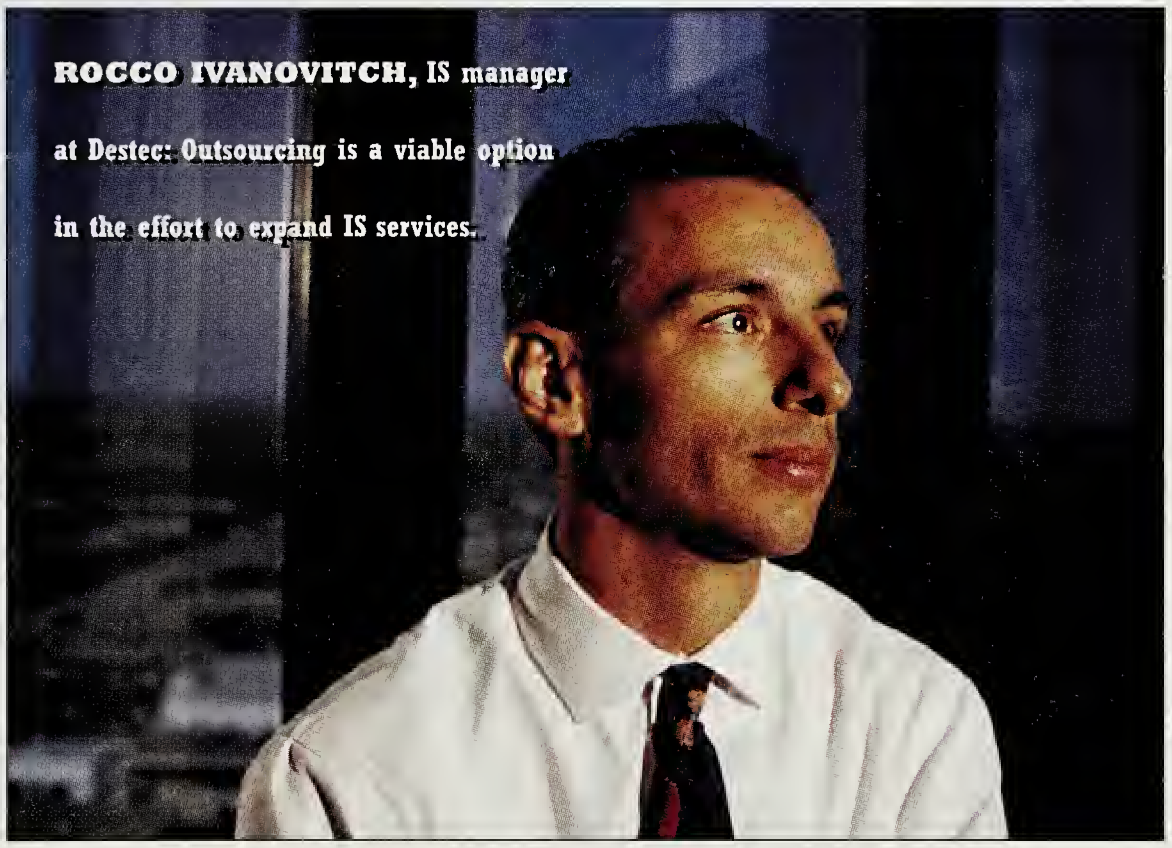
more descriptive of what they do.

For instance, they consult with people such as Maureen Shearer, who has been an administrative assistant at AES headquarters for six years. Shearer recently researched an electronic-mail package for AES. After consulting with Stanley-Miller, she purchased Microsoft Corp.'s Mail and became the mail administrator.

Stan Brayton, one of four electrical technicians at AES's Thames Power Plant in Uncasville, Conn., also made use of the IS consulting model. Brayton says when it comes to IS, the plant's employees have become "like a self-help group."

Five years ago Brayton became the de facto IS representative at the Thames plant when he volunteered to learn about the Digital Equipment Corp. MicroVAX and fill the spot vacated by the plant's previous IS support person. He largely taught himself through seminars and by using Stanley-Miller as a resource and consultant. Brayton still fixes the plant's motors and switchboards, but now he also counsels users on PC buys, recovers lost files and does systems maintenance and backups for the MicroVAX.

What's going on at this company? "The plants and the people are empowered to buy the equipment they need to do their jobs," Stanley-Miller says. "If they see an opportunity, they can go after it." AES's IS independence is an offshoot of its corporate philosophy, which gives employees the power to make decisions for themselves. In return, the company expects its employees to be responsible for the systems they use. •



ROCCO IVANOVITCH, IS manager at Destec: Outsourcing is a viable option in the effort to expand IS services.

Photograph by Will Van Overbeck

Destec Energy, Inc.

HOUSTON

As growth in the independent power industry moves from the domestic market to international markets, many companies are revamping their organizations to better support international business development. Among them is Destec Energy, Inc., formed as a spin-off from Dow Chemical Co. and one of the largest independent producers of power in the U.S.

Number 3

Similar to AES Corp., which is ranked second in the *Premier 100*, Destec develops and owns power projects and produces and sells electricity. It also sells thermal energy and synthetic fuels. Currently, Destec has an interest in 19 operating power projects and has three projects under construction, all domestic. By 1997, the company expects to have two foreign plants in operation: one in Canada and another one in the Netherlands.

Last fall, the company began restructuring as part of its goal to shift from a domestic to an international focus. The restructuring plan included outsourcing most engineering systems, the subsequent layoff of nearly 200 engineers and a merger between the engineering IS group and the corporate IS organization.

Rocco Ivanovich, former head of the engineering IS group, was tagged to man-

Continued on page 18

Continued from page 17

age the merged IS entity of 12 staffers, down from 22. He has been charged with refocusing IS services and making inroads to provide service in areas IS does not now serve.

Projects will continue to be outsourced, Ivanovich says, "if we don't have the expertise or the resources [in-house]." For example, he is considering outsourcing an application to handle international leads.

However, if the expertise is available in-house, "IS is now willing to design specific apps to meet our needs," says Leslie Woods, a contract financial analyst in Destec's business management group. "If anything, the restructuring has helped put people where their skills are, so resources are better allocated," she says.

IS recently designed a specialized database for the business management group to help analysts build long-term models for plants. This will allow the analysts to forecast expected production data and operating expenses, for example, for a particular plant over a number of years. IS developed the application using PowerBuilder and Excel.

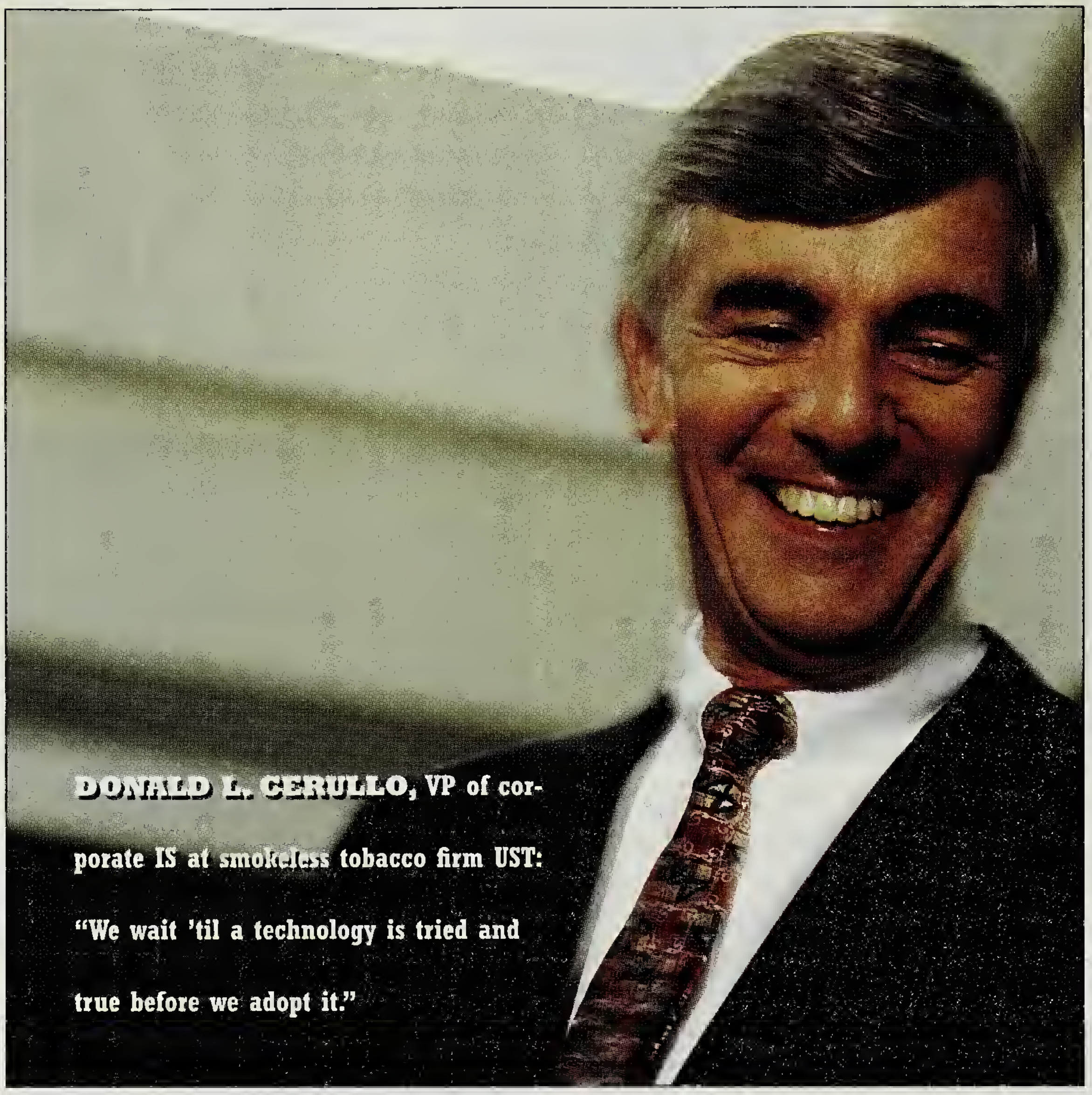
Destec Energy, Inc.

1994 revenue:	$727M
1994 Net income:	$110M
Total employees:	703
IS employees:	12
IS spending as % of revenue:	0.5

With the increase in outsourcing, Destec's relationships with its suppliers and partners will become even more critical. Fostering an atmosphere of partnership, one that clearly identifies shared rewards and risks, is something the company takes seriously, according to Peter Batura, Destec's account manager at Houston Legal Copies, Inc., a solutions integrator that specializes in documentation.

"That atmosphere, combined with IS's sharp focus on its goals," Batura says, "is what creates an environment prone to success."

Partnerships, it seems, are in everyone's best interest. •



DONALD L. CERULLO, VP of corporate IS at smokeless tobacco firm UST: "We wait 'til a technology is tried and true before we adopt it."

Photograph by Lilly Dong

UST, Inc.

GREENWICH, CONN.

AS THE RUNAWAY LEADER IN the world of smokeless tobacco — controlling 85% of the market, according to one Wall Street analyst — UST, Inc. is not so much motivated by its competitors as by its customers, who are driving the company's move toward increased operating efficiencies.

Number 4

UST is a holding company for four wholly owned subsidiaries: United States Tobacco Co., International Wine & Spirits Ltd., UST Enterprises, Inc. and UST International, Inc. In 1994, the company's Copenhagen and Skoal brands of smokeless tobacco accounted for 87% of revenue. The remainder of UST's revenue came from pipe tobacco, pipe and pipe cleaners and Chateau Ste. Michelle wines.

"As customers become more demanding, it forces us to become more effective and more efficient," says Donald L. Cerullo, vice president of corporate information systems. For instance, customers used to be satisfied with a one-week turnaround time from placement of an order to shipment by UST. Now, he says, the customers are demanding faster delivery.

Two of UST's recent IS initiatives that respond to customers' demands for increased efficiency are STARS, a mainframe-based Sales Tracking and Reporting System, and LITARS, a server-based Logistics Information Tracking and Reporting System.

STARS provides sales and marketing staff with desktop access to three years of data on products and customers. LITARS helps logistics staff monitor and improve order delivery by tracking outbound shipments to customers and reporting delivery exceptions. Built using PowerBuilder and Microsoft Corp.'s SQL Server, LITARS is the company's

UST, Inc.

1994 revenue:	$1.2B
1994 net income:	$381M
Total employees:	2,000
IS employees:	55
IS spending as % of revenue:	1.2

first client/server application, according to Cerullo.

To guide the company on where and how it spends its IS budget, Cerullo has a three-point plan for moving the IS department and the company in a steady, controlled fashion toward new technologies, including client/server.

The first and most broad-based factor in this plan is UST's strategic planning committee, which acts as the filter for corporate decisions about new technologies. Cerullo has been a member of this committee for the past two years.

"It ensures that IS is focused only on those projects that are strategic to the company," he says.

The second factor is a rule that Cerullo lives by: UST does not chase leading-edge technologies. "We wait until a technology is tried and true before we adopt it," Cerullo says.

STRATEGIC OUTSOURCING

The company's outsourcing strategy goes hand-in-hand with its efforts to minimize its exposure to untried technologies. UST outsources only those things, "that we believe are not strategic to us," Cerullo says.

The company outsources some programming and PC maintenance but keeps tight reins on mainframe operations.

UST's third rule is that it has standardized on Intel Corp. 486 or higher Microsoft Windows-based networked PCs. Information technology also supports only a limited set of office productivity applications, including word processor, spreadsheet and presentation packages.

The effect of standardization, Cerullo boasts, "is that IS can support more than 700 users with a help desk of four people and a network support group of four."

That's one IS staffer for every 87.5 employees. •

Carnival Corp.

MIAMI

Number 5

There are plenty of islands to be found in Carnival Corp.'s present and future, but none of them will be islands of information. At least not if Jim Bussey, information systems vice president at Carnival Cruise Lines (CCL), has his way.

As the largest cruise line operator in the world and parent of CCL, Holland America Line and Windstar Cruises, Carnival Corp. must provide some 26,000 passengers on 22 ships with all the amenities of a stationary resort hotel. Bussey's job is to support both corporate headquarters and the 10 ships in CCL's fleet.

His top three priorities are interoperability, flexibility and listening to users.

Interoperability is critical for CCL's disparate systems to talk to one another — from the Sun Microsystems, Inc. SPARCstations running the shipboard applications to the linchpin reservation system that sits shoreside on a Unisys Corp. 2200 mainframe. Any potential device or application that doesn't communicate with standard protocols is rejected, Bussey says.

Carnival Corp.

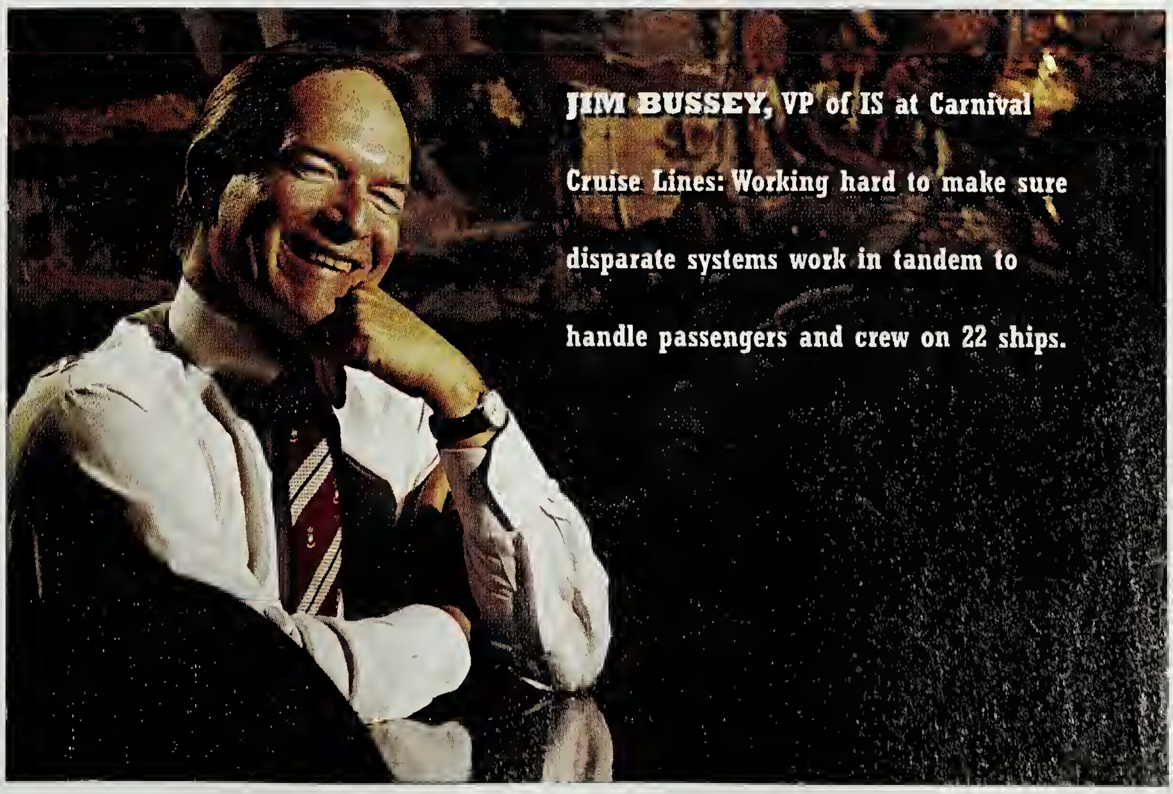
1994 revenue:	$1.8B
1994 net income:	$381M
Total employees:	15,000
IS employees:	114
IS spending as % of revenue:	1.0

Passenger credit-card approval and remittance processing are tied into the homegrown reservation system which, in turn, is integrated with the marketing system. The company's reservations and sales agents use both systems for sending 7,000 to 50,000 faxes a day to travel partners with the latest information about itineraries, ships and shore excursions.

Bussey's flexibility and listening skills came in handy when a financial technology group, formed to liaise with IS, asked for a role in computer design. Immediately, red flags went up for Bussey, who was schooled in the old ways of the glass house.

Still, Bussey decided to give the finance technology group what it wanted. As a result, the IS department is now getting into an imaging project that is being driven by that group, Bussey says.

The outcome: His department's most recent initiative is a successful imaging project, driven by none other than the financial end-user unit. •



JIM BUSSEY, VP of IS at Carnival Cruise Lines: Working hard to make sure disparate systems work in tandem to handle passengers and crew on 22 ships.

Photograph by Red Morgan

Information

MANY OF THIS YEAR'S PREMIER 100 COMPANIES HAVE SALES UNDER $1 BILLION *AND* THEY'RE GOOD AT MANAGING IT. IS THERE A CONNECTION?

BY BRIAN McWILLIAMS

At a recent meeting of the American Forestry and Paper Association's information systems roundtable, Donald Newsom listened intently as IS executives from industry giants such as International Paper Co., Georgia-Pacific Corp. and Weyerhaeuser Co. recounted struggles against corporate bureaucracy.

The irony was not lost on Newsom, MIS director at Caraustar Industries, Inc., an Austell, Ga.-based paperboard manufacturer. Caraustar had sales of $456 million in 1994 and has 3040 employees.

"Some of these people had over 600 employees in their IS group alone," Newsom says. "When I told them we were doing the same thing with only 20 people, they all said, 'Keep that quiet!'"

Well, the secret is out. Despite their lean IS staffs and skimpy overall information technology spending, small to medium-sized companies such as Caraustar, No. 34 on this year's *Premier 100*, have been creating shareholder value like crazy. As a result, these firms, with revenue ranging from $100 million to $750 million, dominate this year's ranking. In fact, only four *Fortune* 100 companies made it onto the *Premier 100* list. (See "MIS-Fortune" on page 23.)

While it's tempting to blame the poor showing of large corporations on bloated IS departments and poor IT management, that would be simplistic, says Paul Strassmann, creator of the Information Productivity Index (IPI), which is the formula *Computerworld* uses to rank the *Premier 100.* (For an explanation of the IPI, see page 10.)

"Information productivity is a function of much more than technology," Strassmann says. "It's a measure of how effectively a company's information sector — people in sales, administration and research and development — contributes to the economic value of a firm."

Some analysts, however, believe IT plays a key role in the higher productivity of smaller companies.

"Without technology, small companies couldn't have

McWilliams is a freelance writer based in Durham, N.H.

Entrepreneurs

achieved such revenue growth without a comparable growth in costs," says Sid Harris, dean of the Peter F. Drucker Management Center at Claremont Graduate School in Claremont, Calif.

That view is shared by Erik Brynjolfsson, associate professor at MIT's Sloan School of Management in Cambridge, Mass. "Smaller firms can benefit disproportionately from information technology. IT enables them to coordinate [activities] more efficiently and to outsource nonstrategic activities," says Brynjolfsson, the author of a widely publicized 1993 study linking IT investments to productivity at *Fortune* 500 companies.

To be sure, there's no single path to information productivity. And only time will tell whether the high productivity scores of smaller firms are just a halo effect from their go-go growth. But a closer look at a handful of smaller firms from the *Premier 100* reveals stark differences in how they manage information vs. larger firms.

For a quick compare and contrast, take Denise Utley, systems coordinator at Tampa, Fla.-based Outback Steakhouse, Inc., ranked No. 9 in the *Premier 100.* In a previous life, Utley was a restaurant manager at Taco Bell Corp., a chain frequently heralded in the press as a technology leader.

"It was data overkill," Utley says of Irvine, Calif.-based Taco Bell. "Restaurant managers spent eight hours a day running reports. They hardly ever got out to the front of the store."

Outback Steakhouse, on the other hand, didn't even have computers in its 260 restaurants until 1992, according to Utley. That's when the company worked with a local consultant to create a restaurant management system that tracks labor, sales and inventory information and produces a variety of basic summary reports. It's a far cry from the technology at Taco Bell, she says. "We don't do much forecasting or theorizing. We want to avoid over-analyzing our business."

What's to analyze when your profits are doubling each year, as they have at Outback since it opened in 1987? To ensure that its restaurant managers spend most of their time serving customers, the dinner-only chain, which sports an Australian theme, has designed its reporting systems to be simple and streamlined.

Continued on page 24

RISING ABOVE THE BUREAUCRACY: Donald Newson, MIS director for paperboard maker Caraustar Industries, Inc., outperforms larger competitors with an IS staff of just 20 people.

Photograph by Rob Nelson, Illustration by Larry Goode

Total multi-vendor chaos incompatible protocols inflexible systems inaccessible

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Continued from page **21**

"We don't want our restaurant managers drowning in greenbar printouts. If the information isn't meaningful to them, we won't collect it," says Bob Merritt, vice president of finance. "This is still a people business," he adds, "and I don't think you can judge the quality of operations from financial reports."

Coming from a chief financial officer, those words verge on heresy, but Outback isn't afraid to challenge conventional wisdom. Case in point: The restaurateur doesn't use data to micromanage the stores from headquarters. "We don't want computers telling our restaurant managers how to run their businesses," Merritt says.

AVOIDING BUREAUCRACY

You won't find much IS bureaucracy at Amarillo, Texas-based Western National Corp. either. Ranked No. 15 in the *Premier 100*, Western National is a leader in the annuity business, managing assets in excess of $8.6 billion with a data processing staff of 11 people.

Like Outback Steakhouse, Western National has no executive in charge of information systems. The rationale: "We don't want to bottleneck [information management] through one person or one department, such that if you want information, you have to go to them," says Darryl Allen, second vice president of annuity operations at the insurer, which had 1994 revenue of $615 million. (Western National was formed in February 1994, as a spin-off from Conseco, Inc.)

The strategy seems to be working. A recent investment report by Stanley Goldring, director of research at Ladenburg, Thalmann and Co. in New York, singles out Western National for its efficiency compared with the rest of the life insurance industry, which, according to the report, "languishes under entrenched bureaucracy and outmoded processing systems."

As Allen sees it, the key to information productivity isn't having lots of information at your fingertips; it's having fewer decision-makers. Three changes in corporate ownership in the past 15 years have prevented a bureaucratic morass at Western National.

"When you only have 200 employees, you sort through issues pretty quickly," Allen says. "We get information, make a decision and go on with it. We're not fighting about it a year later."

The company's current systems efforts are aimed at better supporting front-line representatives. "We have to do a better job at pushing information down to the people who can do something with it," says Allen, who is leading an initiative to re-engineer the company's business processing systems.

Making customer service the basis of competitive advantage is hardly unique. Those who succeed usually have figured out how to tie information management to customer support.

"One way to keep customers coming back is by giving them the information they need to run their own businesses smoothly," says Jack Pacey, director of information services at Wausau Paper Mills Co., ranked 25 on the *Premier 100.*

Though today's sky-high pulp prices may tempt another company into a strictly cost-driven focus, Brokaw, Wis.-based Wausau, which sold over $426 million worth of writing, printing and specialty papers last year, remains customer driven, Pacey says.

Wausau's "check stock" program, for example, lets customers dial in for recorded real-time information on inventories before placing an order. When customers want to speak to a live person, service department representatives can pull up detailed order information, such as shipping dates. The reps can bump "hot" items to the top of the list if a customer is in a crunch. Orders are then transmitted electronically to warehouse workers via radio frequency units mounted on their forklifts. And, as an order leaves Wausau's docks, the on-line inventory system automatically faxes a detailed shipping notification to the customer.

Remarkably, Wausau gets all this done while spending less than 1% of sales on IT, according to Steven Schmidt, vice president of finance. There's no magic involved. "We manage IS the same way we do the rest of the company: We focus resources on areas that matter," he says.

IN THE BUSINESS

Responsiveness to internal customers is another big factor differentiating IS groups in small companies from their larger brethren. Too often in big companies, end users and IS become locked in what seems like a game of *Mortal Kombat*, one of the hot-selling arcade games manufactured by WMS Industries, Inc.. WMS ranks 42 in the 1995 *Premier 100.*

But talk to end users such as Sue Knauer, a materials manager at Chicago-based WMS and you'll hear unsolicited praise for IS: "Our systems people are extremely easy to work with. It's not like some companies, where you just submit a form to them and wait for a response."

That's because WMS colocates most of

Illustration by Larry Goode

MIS-Fortune

Once a sign of corporate achievement, making the *Fortune* 500 has become a dubious distinction. After all, ranking companies by revenue alone says little about the performance of their businesses.

Only 19 *Fortune* 500 companies made it onto *Computerworld*'s 1995 *Premier 100* list, and only four of those are *Fortune* 100 companies: Coca Cola Co., ranked 48 on *Fortune*'s list and 61 on the *Premier 100*; Merck & Co., 59 on *Fortune*'s and 50 on the *Premier 100*, Anheuser-Busch Cos., ranked 85 and 94, respectively; and Bristol-Myers Squibb Co., 86 and 78, respectively.

The poor showing of the top *Fortune* firms begs the question: Is size relevant?

Sure, the *Fortune* 100 account for 63% of the nation's gross domestic product. But size captures past success. The collective ability of these companies to manage information — as measured by *Computerworld*'s Information Productivity Index (IPI) — may be a more appropriate indicator of their future competitiveness. (See page 10 for an explanation of how the IPI is calculated.)

Big ≠ Productive

3-Year Information Productivity Index for the Top 10 Fortune 500 companies

1.	General Motors Corp.	**-0.57**
2.	Ford Motor Co.	**-0.23**
3.	Exxon Corp.	**0.03**
4.	Wal-Mart Stores, Inc.	**0.10**
5.	AT&T	**-0.07**
6.	General Electric Co.	**0.15**
7.	IBM	**-0.23**
8.	Mobil Oil Co.	**-0.23**
9.	Sears Roebuck & Co.	**-0.03**
10.	Philip Morris Cos.	**-0.10**

Source: *Computerworld* and Paul A. Strassmann

Hurting the IPI scores of big companies such as General Motors Corp. is the bureaucracy in their information sector, as indicated by plump selling, general and administrative (SG&A) and R&D expenditures.

On average, the three-year IPI of the *Fortune* 100 averaged 0.12, about one quarter of the *Premier 100*'s overall 0.43. average.

Of course, no measure of corporate performance is perfect. But as the economy shifts in favor of smaller, less vertically integrated companies working in interconnected supplier relationships, information productivity may be the number to watch.

— *Brian McWilliams*

its 18-person IS staff at the company's business units. They work shoulder to shoulder with users such as the crew of young, creative engineers who design WMS's pinball and video games. The IS staff is developing a document management system for this design team.

The arrangement gives Theresa Pudi, director of MIS at WMS, great flexibility in assigning resources. "In big companies, everything is done through committees, and decisions can take forever. Here, I can easily borrow a programmer from one group and give him to another," Pudi says.

Pudi says all IS executives talk about the need for aligning IS with the business, "but we get to do what others only preach. Our group knows everyone in the company because we are literally in the business."

Similarly, Newsom says he still tries to find time to walk around the plant and chew the fat with people. He also personally tests all the major new applications developed by his group before releasing them to users. "Word gets around pretty quickly that you're here to help, so we're viewed very well by users," Newsom says.

Of course, IS managers in smaller companies sometimes have to set some limits on responsiveness. Newsom says he and his staff all carry pagers and are on 24-hour call. But as he gets older, it's becoming harder to respond to 3 a.m. calls from panicked users who can't get their PCs to boot. Maybe some lessons in delegating-big-company style are in order. **100**

IN THE BUSINESS MIX: **Theresa Pudi, MIS dirctor at WMS Industries, maker of Mortal Kombat, colocates her 18 IS staffers in the company's business units.**

Network Management - UK

Internet Services - USA

Wireless Data Collection - Brazil

CTI Solutions - Japan

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CLIENT/SERVER

No Pain, No Gain

Illustration by Joe Fleming

While **86%** of *Premier 100* companies surveyed are using client/server, many maintain a healthy skepticism

BY WILLIE SCHATZ

THE GOOD SEEMS TO OUTWEIGH THE BAD for most *Premier 100* companies grappling with client/server implementation.

Take The Charles Schwab Corp., the world's largest discount broker and No. 68 on the *Premier 100* list. Schwab's 510-person IS staff is in the middle of a seven-year initiative to remake its information systems with client/server.

"Moving to client/server has tremendously increased our internal productivity," says Dawn Lepore, Schwab's chief information officer. "We're replacing our old [MVS-based mainframe] because it no longer had the capacity to handle our increasing business demands. We're integrating our telephony applications. We're giving our users a [graphical user interface] with Windows. That's putting more information at our users' fingertips."

These wholesale changes enable Schwab to provide better service to its customers, Lepore says. "We can respond to their requests faster and more accurately. And we

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Continued from page 27

can get their requests to market before any of our competitors."

Schwab fits the client/server *Premier 100* profile to a tee. Most of the 56 *Premier 100* companies that responded to *Computerworld's* survey say they are implementing client/server for competitive advantage. Specifically, they want to increase the flexibility and autonomy of users, improve business performance and decrease information technology development cycle time.

Of course, there's no gain without some pain. The biggest problem *Premier 100* companies face in their client/server implementations is the complexity of the multivendor environment (57%) and the lack of trained personnel (55%), according to the survey.

Photograph by Brian Smale

"If you implement client/server just to save money, you're going to be in deep [expletive]," says W. Ben Kuenemann, senior managing director at The Bear Stearns Cos., the New York financial services holding company and No. 33 on the *Premier 100*.

Kuenemann led Bear Sterns into the client/server world to attack the cycle time between the start and the finish of a financial transaction; in the money game, an extra nanosecond can mean extra millions of dollars. Kuenemann's first experiment was to transfer the government trading piece of the business from an Amdahl Corp. 700 mainframe transaction-based system to a Unix-based client/server environment running on a Sun Microsystems, Inc. SPARC 2000.

"We've had limited success, but at least it works," Kuenemann admits.

People are a key factor in the success of client/server, he says. "Client/server is a relatively new technology, so not as many people understand it or know how to design for it," he says. "Getting and keeping well-trained staff is very difficult."

> "If you implement client/server just to save money, you're going to be in deep [expletive]."
>
> **W. BEN KUENEMANN**
> **Senior managing director, The Bear Stearns Cos.**

TEAMWORK

When the right team does come together, everyone knows it. Just ask Omaha, Neb.-based First Data Corp., ranked 46 on the *Premier 100*.

The world's largest provider of bank-card processing and other high-volume information services was desperately seeking an imaging system that would be more efficient, more effective and faster at reading credit-card applications.

"We wanted a system that would handle 10,000 image applications a day," says Jim Brown, senior vice president of First Data's bank-card program services. The system had to accurately read handwritten credit-card applications.

Brown assembled a specialized, experienced team of IS staffers to work only on this intelligent character-recognition application. The team developed a client/server solution that recognizes 60% to 70% of the characters it sees and makes educated guesses on the remaining ones. The system, which will go on-line later this year, is based on an in-house version of a Wang Laboratories, Inc. imaging system running on Hewlett-Packard Co. servers. Desktop users tap into the database via Pentium-based PCs.

"There's been a 300% improvement in the number of applications handled by our employees," Brown says. "Bank customers can get their loans much faster. It's made us much more efficient. It also makes us much more marketable to other clients."

COMPETITIVE ADVANTAGE

Pain or not, client/server is seen as a competitive necessity for many *Premier 100* companies. "If we determine that a new technology will give us a competitive advantage and that the return on investment is worth the risk, we'll be first," says Steve Sullivan, manager of the data center at Baltimore-based T. Rowe Price Associates, Inc., ranked 55 on

Why implement client/server?

Increase end-user autonomy	**61%**
Decrease IT development cycle time	**39%**
Improve business performance	**36%**
Improve IT customer satisfaction	**36%**

Source: *Computerworld* survey of *Premier 100* companies

the *Premier 100*. Sullivan sees client/server as a tool for boosting productivity. "We look at everything we need to do and where client/server systems will run best." T. Rowe Price spends about $15 million annually on client/server, he says.

One current client/server project is an imaging system for customer service representatives. When a customer calls, the database recognizes the caller's number and transmits all the necessary information (discounted brokerage accounts and mutual funds, for instance) to the representative on the line, says Tim Hudner, vice president of enterprise initiatives. The system can read the number a customer dialed and tell the representative what specific information the customer is requesting. For example, the rep will know if a customer dials a toll-free 800 number in response to an Asia-fund ad.

"In general, we're successful," Sullivan says, while ruing the additional six months it took to develop the imaging system. "That's not inconsistent with our client/server experience generally. Client/server systems cost just as much to develop and more to maintain than most mainframes, but client/server gives you much more functionality and flexibility." Still, Sullivan is in no rush to dump the mainframe.

Any *Premier 100* company will tell you client/server delivers the goods, even if few have plans to discard the mainframe. In some cases, the gains are a matter of survival.

"To not do client/server because you think it's too expensive or that it's too difficult to find experienced people or that they're going to cost too much is not an acceptable answer," Kuenemann says. "You've got to have an architecture that's nimble enough to meet your customers' requirements faster than your competitor can." **100**

✎ **Schatz** is a freelance writer based in Washington, D.C.

Q. What has been the most difficult aspect of implementing your client/server system?

"The hardest thing has been for someone to give us a definition of what exactly client/server is. If it came in a box, we'd be all set."

Rick Maddia

Director of MIS, Audiovox Corp.

"The way we announced it and the uproar it caused in the technological community. We just said that the client/server system would eventually replace the mainframe. That caused a terrific culture clash between the mainframe bigots and the distributed computing visionaries."

Jim Brown

Senior vice president of bank-card program services, First Data Corp.

"Making such classic mistakes as picking applications that weren't appropriate to the technology and picking tools which vendors said were robust — then discovering that they weren't."

Peter Crowell

Vice president of MIS, CBS, Inc.

"Finding tools to manage the system day-to-day. There are no capacity planning tools on the market, and there are no tools for managing the environment from a central location. And even now it's difficult to find people who know what they're doing in client/server environments."

Steve Sullivan

Manager, data center, T. Rowe Price Associates, Inc.

"Multiple vendors. They're a part of life, but they're still very difficult. Immature products and a very painful internal learning curve. [Client/server] is sold as being much easier than it really is."

Dawn Lepore

CIO, The Charles Schwab Corp.

"Standardization. You don't do it the same way in each and every instance."

Nicholas M. Elsberg

Vice president of information services, Arthur J. Gallagher & Co.

"The middleware matrix jail. The tools that we've been using don't mate together. The front-end tools, back-end database engines and third party cause us extreme frustration."

Ronald Boeving

Vice president of IS, HealthCare Compare Corp.

Approaches differ widely, but business process re-engineering has earned a place in **93%** of these leading firms' corporate toolboxes

Revamp Champs

BY JOSEPH MAGLITTA

IT'S BECOME FASHIONABLE in many information systems circles to scoff at re-engineering. "A fad," sniff some. "New name, old stuff," huff others. But you're unlikely to hear such talk from *Premier 100* companies.

Most say they are tackling major process redesigns, especially in finance and accounting, customer service and order fulfillment (see chart page 34). So much for the notion that only struggling organizations need to re-engineer.

You're also unlikely to see *Premier 100* companies using a cookbook approach to process redesign. While all of them have a methodology, they've adapted re-engineering to fit their own business and culture. Here's a look at the strategies of three *Premier 100* companies: Eli Lilly & Co., ranked 97, Royal Carribean Cruises Ltd., ranked 92, and Amgen, Inc., ranked 40. At Eli Lilly, new Chief Information Officer Tom Trainer recom-

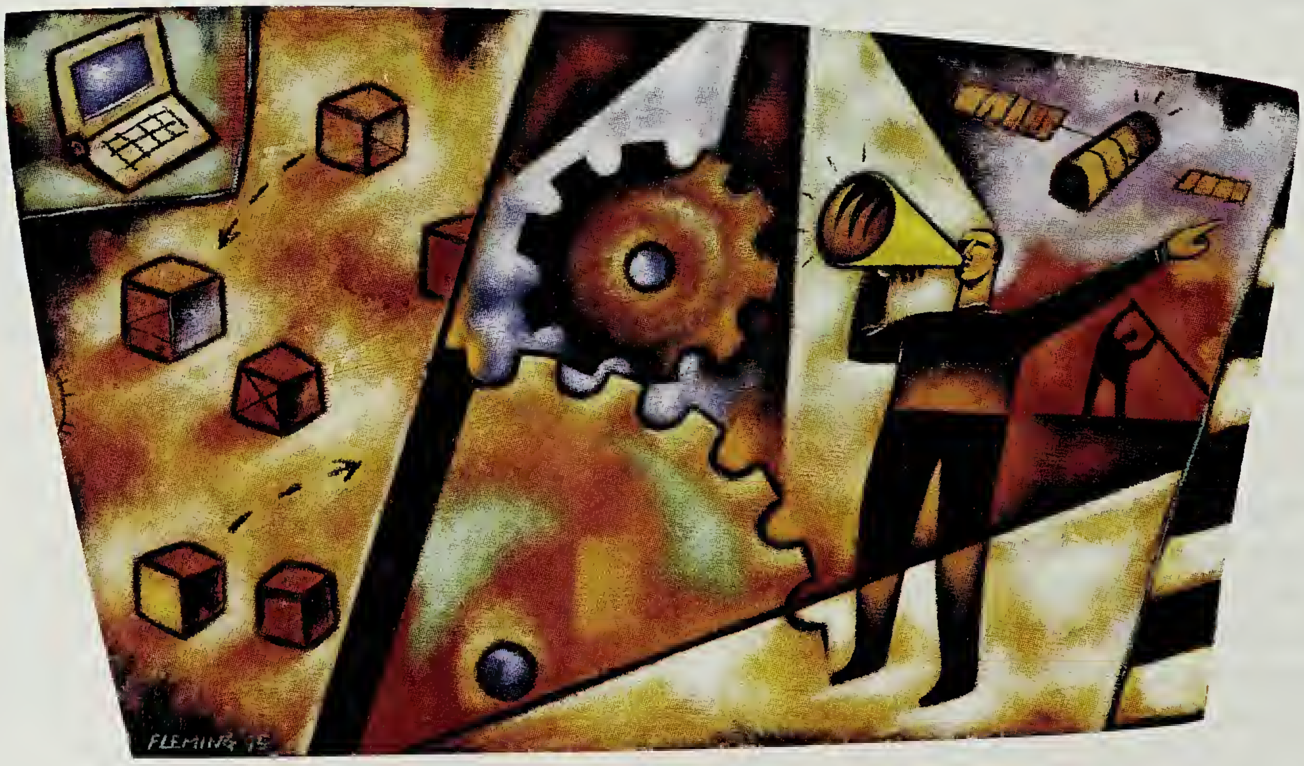

Illustration by Joe Fleming

mends re-engineering as powerful medicine.

Since taking the CIO job in March, Trainer has stepped up Lilly's 2-year-old effort to recreate drug development, manufacturing, order processing and distribution. In an industry feverish about speed, economy and efficiency, Lilly burns with the best of them.

> "Re-engineering is crucial to the survival of Lilly."
>
> **Tom Trainer**
> **Chief information officer at Eli Lilly & Co.**

BIG SAVINGS

The company says process revamps have moved it toward a goal of slashing 25% from sales and manufacturing costs. Total projected savings from re-engineering is $200 million. The firm's Sphinx Pharmaceuticals Corp. in Durham, N.C., has increased the speed of discovering new drug compounds by 2000% over the last couple of years by using virtual reality and Cray Research, Inc. supercomputers.

"The paradigm has shifted enormously in the drug industry," says Larry Rothman, who heads Ernst & Young's pharmaceutical industry practice. "Speed to market is key."

Trainer is helping to take re-engineering outside company walls in hopes of turning the world's 11th largest drug maker into a value-added provider of pharmaceutical and treatment information, products and services.

To get ahead technologically, Lilly Chief Executive Officer Randall Tobias hired Trainer from Reebok International, Inc. At Reebok, the 24-year industry veteran led a four-year, $75 million redesign effort.

In his new post, Trainer has a seat on the influential 10-person board that runs Lilly. He also plays a lead role in inventing new business directions and in the company's re-engineering program.

For the first time in many years, the $5.7 billion Indianapolis-based firm also revised its mission statement to emphasize information technology. It is this high-level commitment, Trainer says, that drives company re-engineering efforts.

As described by Lilly, the new wave of re-engineering will reach into the offices of physicians, pharmacists, clinics, insurance companies and even testing labs via the Lilly Health Care Network.

This national network would deliver a wide range of information and value-added services to various parts of the healthcare chain. Doctors, for example, could get real-time advice on the best, most cost-effective drug treatement program.

Trainer and his 900-member staff will play a key role as the burgeoning network further evolves. "Re-engineering," he declares, "is crucial to the future survival of Lilly."

ON THE HIGH SEAS

At Royal Carribean Cruises, vacationers to Aruba, Jamaica, Mexico and other exotic spots aren't the only people sailing the high seas.

Each cruise by the Miami-based line takes hundreds of crew members working in food service, hospitality, the casino and even in IS. Deploying several thousand workers serving on 10 ships that make hundreds of cruises a year is no small task.

"Senior management recognized that we were spending a great deal of resources on people, time and money to acquire crew and move them around from ship to ship," says Ronald W. Sieman, vice president of information technology. Airline, hotel and interviewing costs totaled millions of dollars annually.

Photograph by Harold Miller

And the big job promises to get bigger: Royal Carribean plans to add five new superships by early 1998.

Convinced that hiring and crew tracking costs had to be reduced, the 25-year-old cruise line decided earlier this year that crew acquisition and management would make an ideal first redesign project. "We haven't had massive re-engineering around here," says Sieman, who heads a 90-person IS group. "We chose carefully."

As part of the solution, this summer Carribean began an 18-month in-house project to develop an AS/400-based client/server system that will track travel costs for employees, forecast crew movement on and off ships and ensure that company employees get the best airline deals.

Formed in the spring, a seven-member steering committee includes senior managers from finance, food

Continued on page 34

Q. What's your worst re-engineering nightmare?

"Unrealistic upper management expectations of what was going to come out. Cost savings and timing were unrealistic. We had to put it all in perspective. We're not going to save a million dollars in a year, but maybe more like $500,000 in five years."

RICK MADDIA
Director of MIS, Audiovox Corp.

"Some of our problem areas have been where the users more or less are not prone to go paperless. [In some sites] we've tried to take the paper away and couldn't do it. It causes problems because of timing. [On-line] is real time. Paper isn't."

JOHN S. PACEY
Director of information services, Wausau Paper Mills Co.

"I can't say we've had any nightmares. We have so many opportunities in re-engineering, I'd [say] the only thing we need to do really is prioritize . . . what we think is going to give us the biggest bang for the buck. But I wouldn't call that a nightmare."

RICH CRUTCHFIELD
Senior vice president of technology and database services, Equifax, Inc.

"Too many variables can be a nightmare. The re-engineering process, the technology and the people work-flow. Anytime you try to change the variables, you lose."

ALLAN DITCHFIELD
Director of MIS, The Progressive Corp.

"The biggest re-engineering problem is a lack of commitment from the top. If that's not there, the effort will fail."

TOM TRAINER
CIO, Eli Lilly & Co.

RE-ENGINEERING

Continued from page 33

and beverages, hotel, human resources, Sieman and consultants from KMPG Peat Marwick. Meeting two or three times a week, they redesigned how crews were acquired in six months.

This month, the $1.1 billion cruise line also plans to roll out a client/server-based version of CruiseMatch 2000, the industry's first direct-access booking system.

Where the Premier 100 focus their re-engineering efforts

• Finance & accounting	**57%**
• Customer service	**55%**
• Order fulfillment	**39%**
• Marketing/sales, Manufacturing, Logistics	**32% (TIE)**
• Product and service development	**21%**

Source: *Computerworld* survey of 56 *Premier 100* companies.

WHEN THINGS EXPLODE

Does a biotech firm that built new systems and processes from scratch only six years ago need re-engineering? You bet, says Bruce Whetstone, the former director of corporate IS at Amgen, Inc. (In July, Whetstone left Amgen after more than five years to become CIO of a large semiconductor test equipment company.)

The Thousand Oaks, Calif., firm shipped its first product in 1989 — a red blood cell booster called Epogen. In 1991, Amgen introduced a second product that boosts white blood cells. Sales shot from $200 million six years ago to $1.5 billion last year. "Things literally exploded," Whetstone says.

Amgen's systems also mushroomed. They grew from a handful of workstations and a Prime Computer, Inc. 2450 minicomputer to a worldwide network with nearly 6,000 Macintoshes, PCs, workstations and servers and a Convex Computer Corp. supercomputer.

"We invented processes as we went along," he adds.

With seven new "product candidates" in the pipeline, Amgen began rethinking core systems and processes.

Last year the firm began revamping the procurement process in hopes of eliminating paper. Researchers placed orders for test tubes and other lab supplies in a Notes database, then submitted them through corporate systems to any of a dozen or so vendors via electronic data interchange.

But when the 80-user pilot ended this summer, labor savings were 25%, only half the target. Whetstone says an investigation revealed users were slowed by a less-than-friendly interface.

Undaunted, Amgen now is looking for ways to speed up new product testing. The company recently hired Richard Chadwick as associate director of clinical information to help tackle the time-to-market issue. The firm is exploring the use of personal digital assistants to expedite field data collection.

"Who's going to get the patent position first?" Whetstone asks. "It's all data processing. Anything we can do to shorten the length of the chain is critical." **100**

Maglitta is *Computerworld's* senior editor, corporate strategies.

Illustration by Joe Fleming

In all, **73%** of *Premier 100* companies surveyed say they outsource some IT function. Which begs the question,

Make or Buy?

BY STEVE ALEXANDER

THE ILLINOIS CENTRAL RAILROAD moves 1 million freight cars a year without keeping track of any of them.

Instead, the company, ranked 22 in the *Premier 100,* outsources what is arguably its most important function, railcar management, to the information systems arm of another railroad, the Union Pacific.

Is something off the tracks here? Not at all, insists Norm Schwarz, Chicago-based director of technical network support for Illinois Central Corp., the holding company for the Illinois Central Railroad. Through outsourcing, the railroad takes care of its customers without making a sizable investment in new applications and equipment.

While there may be no direct correlation between a company's outsourcing strategy and its Information Productivity Index (the calculation used to rank the *Premier 100*), Illinois Central and other *Premier 100* companies say their outsourcing is directly tied to corporate vitality.

Indeed, *Premier 100* companies outsource for a variety of strategic reasons. Access to skilled professionals and the ability to focus internal resources on core applications

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are the two most commonly cited criteria, according to a survery of 56 *Premier 100* companies. Cutting costs and project time and increasing IS flexibility are some other reasons. Illinois Central's outsourcing decision was based on a desire to keep the size of its IS department manageable.

Illinois Central began outsourcing applications for the tracking of trains, individual freight cars and cargo in late 1990. It chose Union Pacific Technologies, a St. Louis-based division of Union Pacific Corp., the parent firm of the Union Pacific Railroad, because it knows the railway business and has a good reputation as an outsourcer for several smaller railroads, Schwarz says. (The two railroads are independent.)

Outsourcing has allowed Illinois Central to take care of its internal and external customers without adding to its 50-member IS staff. For example, Union Pacific Technologies provides electronic data interchange that is more elaborate than Illinois Central could have managed without adding to its IS staff.

KEEP IT SIMPLE

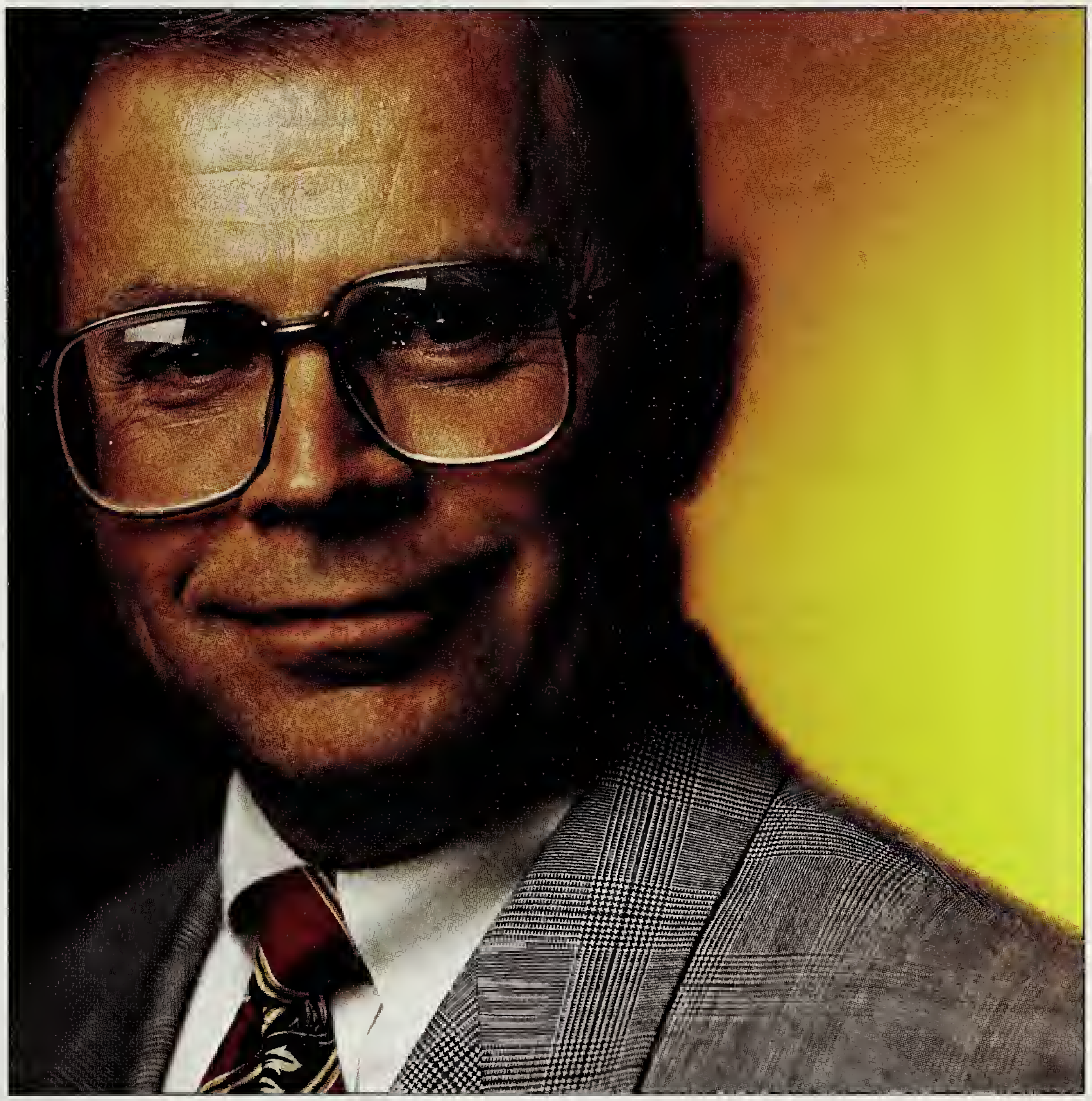
Like Illinois Central, Champion Enterprises, Inc., ranked 85 in the *Premier 100,* chose outsourcing as a way to keep its IS staff small. Its five-person staff supports 20 manufacturing locations.

For the past 18 months the Auburn Hills, Mich., mobile home manufacturer has outsourced almost all its programming to Kirtland Associates, Inc. in Royal Oak, Mich. Since March, the company has outsourced payroll to Automated Data Processing, Inc.'s Detroit office.

With 3,925 employees and sales last year of $615 million, the company has been averaging about 30% annual revenue growth for four years.

"The big problem was that we needed programming on a timely basis because we couldn't keep up with the company's growth," says David Waters, director of information services at Champion.

Waters was unable to sell management on the need to put programmers on staff. Outsourcing was the logical option.



Photograph by Sandro Miller

"We would have had to quadruple our staff to even approach some of the things that are being done by Union Pacific."

NORM SCHWARZ
Director of technical network support at Illinois Central

Outsourcing, however, is no panacea. "Losing control is the biggest frustration that we have," Waters admits. "We know that we're getting programming faster than if it were [done] in-house. But there are still times when it's never fast enough."

The loss of control that occurs with outsourcing doesn't draw as many complaints as it once did. "Five years ago that issue was absolutely paramount," says Allie Young, a senior analyst at market researcher Dataquest, Inc. in Westboro, Mass. "But we've found that it has gone down on the customer list of issues because they see the other advantages of outsourcing."

According to Young, the technology companies are increasingly willing to relinquish a certain amount of control to gain competitive advantages and access to skills they don't have in-house.

HAVING IT ALL

But others, such as Jeffrey Zonenshine, MIS director at comic book powerhouse Marvel Entertainment Group, Inc. in New York, say they can outsource large portions of IS and still maintain tight control.

Marvel, ranked 37 in the *Premier 100,* has gone from 100% IS outsourcing a year ago to 50% in the last year as Zonenshine has built an internal IS staff to cope with the company's growth. Zonenshine predicts the company will reach revenue of about $800 million this year, up from $514 million in 1994. He also expects that Marvel will continue to rely on outsourcing for about half of its IS needs.

Zonenshine divides his IS needs into

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two distinct classes. “Whenever we need generic skills, we outsource,” he says. “With the internal team we concentrate on more strategic opportunities where a knowledge of the Marvel business and technical environment is critical.”

Marvel’s IS staff primarily works on end-user computing and departmental applications, while the outsourcer handles software hotline support.

Tim Bourgeois, an International Data Corp. analyst who follows outsourcing, says Marvel is typical of a movement toward strategic or selective outsourcing in which a company keeps its core business in-house. “Most outsourcing in the past was done to save money, but that’s changing quite a bit,” Bourgeois says.

This change in focus was a factor in some of McDonald’s Corp.’s recent outsourcing decisions. McDonald’s, ranked 89 in the Premier 100, has been outsourcing improvements to existing software for two years and software maintenance for more than five years, according to Erma Gray, director of information services.

Gray says the decision to use outsourcing was based both on a savings of 20% to 30% on software improvements and a desire to keep the in-house staff focused on new technology projects.

“Our motivation was more related to employee satisfaction. This allows the [IS staff] to grow and develop in other areas,” Gray says.

“It is common, to some degree, to motivate internal staff by using an outsourcer to do routine stuff,” agrees Chuck Barbour, Indiana-based vice president of Midwest operations for Computer Task Group, Inc. in Buffalo, N.Y., which handles software improvements for McDonald’s.

“By outsourcing with us, McDonald’s no longer has to be concerned with the constant churning of staff,” he says. **100**

Alexander is a freelance writer based in Edina, Minn.

Disaster recovery (**48%**) is the most common IT activity outsourced by *Premier 100* companies. Network operations (**29%**) and application development (**25%**) were runners-up.*

*Source: *Computerworld’s* exclusive survey of *Premier 100* companies.

Q. If you could do it over, what would you change in your outsourcing contract?

“One of the things we would demand now that we didn’t in the first place is that the programmers remain at our location. I think we could get faster feedback when there was a problem with a program, and we could find the right person and get it changed.”

DAVID WATERS

Director of information services, Champion Enterprises, Inc.

“Put in tighter controls in terms of deliverables and schedules. I’ve put outsourcers on [the] same level as internal staff. We tied compensation to achieving specified objectives within specified time frames. That didn’t exist before, and projects sometimes dragged out too long.”

JEFFREY ZONENSHINE

MIS director, Marvel Entertainment Group, Inc.

“Some clarifications. There have been questions at times about just what outsourced work is mandated by the Association of American Railroads and what ‘enhancements’ mean. Mandates are free, while enhancements cost money. Those kinds of things need to be spelled out a little better in the contract.”

NORM SCHWARZ

Director of technical network support, Illinois Central Corp.

“I would have somebody dedicated to managing outsourcing. I’m not dedicated to that; I have some other jobs. If you go into outsourcing thinking it’s hands off and give it to some other firms to do, that’s a big, big mistake. It has to be managed.”

ERMA GRAY

Director of information services, McDonald’s Corp.

“Being able to predict future technology, which changes so quickly. You can only forecast technology changes for a four- or five-year period. Client/server changes at 40% to 50% a year. In addition to all this newness, there’s politics and changes going on.”

ALLAN DITCHFIELD

Director of MIS, Progressive Corp.

“We would build in more accountability. We’d have more timelines and goals to meet and deadlines with deliverables. [In one of our projects] we did a major retail point-of-sale system which got away from us. We didn’t have checkpoints along the way.”

RICK MADDIA

Director of MIS, Audiovox Corp.

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Smart? Or J

THIRTY-FOUR COMPANIES ON THIS YEAR'S PREMIER 100 LIST SPEND LESS THAN 1% OF THEIR REVENUE ON IS. FACED WITH TIGHT BUDGETS, THEIR IS MANAGERS MUST KNOW THEIR BUSINESS AND KEEP THEIR PRIORITIES STRAIGHT.

BY ROCHELLE GARNER

FROM THE NATION'S capital to the nation's boardrooms, the focus these days is on doing more with less. But there's a fine line between being fiscally conservative and just plain cheap. Most organizations, the *Premier 100* included, seek a balance between being thrifty and miserly.

Balance is especially critical for corporate information systems departments. Lean too far in one direction and a chief information officer will fall into a budget trap that condemns the IS organization to life as a perennial cost center. Stay poised and the CIO will appease the bottom line and improve the company's competitive stance.

The secret is in knowing the corporation's business. Without that core knowledge, IS executives simply cannot balance the twin demands of lean operations and improved productivity. It's a balance that many on the *Premier 100* list appear to have mastered.

TIGHTFISTED

Take John E. Mitchell. Cultivating frugality to a high art, Cooper Tire & Rubber Co.'s IS director consistently manages to keep his department's budget below 1% of sales. Cooper's corporate culture wouldn't have it any other way.

"Cooper is notorious for being tightfisted," says Edward J. O'Brien, a securities analyst who covers the tire industry for brokerage firm Hilliard Lyons, Inc. in Louisville, Ky. "It has had a unit growth rate of only 1.7% compounded annually for the past 15 years," he explains. "That means competitive advantage comes from selling a product better, delivering it faster and making it cheaper."

Hence Mitchell's keen attention to finances.

But don't get the impression he's cheap. Mitchell's 112-person department oversees application development and operations that, despite a mere $12.6 million budget, add new capabilities to Cooper's overall business. The most recent example is a $5 million customer service, order-entry, pricing and inventory allocation system, the first large client/server system for the tire industry's low-cost leader.

"This project will improve our service by taking an order from our customers like Lands' End can do," Mitchell says. "The system isn't saving money. It's making money."

Impressive, yes. But even more impressive is this: Eight months into the 11-month development project, the Findlay, Ohio-based company remains on time and on budget.

The project illustrates just how Mitchell's team manages to pull productivity gains out of a thin wallet. The ingredients include extraordinary attention to detail, strong oversight and close ties with Cooper's internal customers. Like every project undertaken at Cooper, the customer service system has been managed with quarterly reviews that track project milestones, compare hours planned against hours spent and determine goals for the next quarter.

Smart and Cheap

IS SPENDING AS A PERCENT OF REVENUE FOR THE MOST RECENT FISCAL YEAR

Caraustar Industries, Inc.	0.7%
Champion Enterprises, Inc.	0.1%
Cooper Tire & Rubber Co.	0.9%
Premier 100 (Average)	2.6%

Source: *Computerworld* and company information

But the question remains: How does Mitchell squeeze the greatest corporate benefit out of his IS budget? "One way is to only work on the most important and best-return projects," he says.

Every capital expense at Cooper over $10,000 goes through a rigorous approval process, which includes a written justification, its expected monetary return and a thumbs-up or thumbs-down from a review board comprising 20 of the company's senior executives.

"We look at a dollar investment and the present value of

Garner is a freelance writer based in San Carlos, Calif.

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- 21. Dir./Mgr. MIS Services, Information Center
- 22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr. /PC Mgr., Tech Planning, Admin Services
- 23. Dir./Mgr. Sys. Development, Systems Architecture
- 31. Programming Management, Software Developers
- 41. Engineering, Scientific, R&D, Tech. Mgt.
- 60. Sys. Integrators/VARs/Consulting Mgt.

CORPORATE MANAGEMENT
- 11. President, Owner/Partner, General Manager
- 12. Vice President, Asst. VP
- 13. Treasurer, Controller, Financial Officer

DEPARTMENTAL MANAGEMENT
- 51. Sales & Mktg. Management
- 70. Medical, Legal, Accounting Mgt.

OTHER PROFESSIONAL MANAGEMENT
- 80. Information Centers/Libraries, Educators, Journalists, Students
- 90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply)

Operating Systems

(a) Solaris	(e) Mac OS
(b) Netware	(f) Windows NT
(c) OS/2	(g) Windows
(d) Unix	(h) NeXTstep

App. Development Products
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Networking Products
☐ Yes ☐ No

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ust Cheap?

LOW BUDGET

the cash flow that would result from it," explains Phil Weaver, vice president and Tire Division controller, who also sits on Cooper's capital appropriations committee. "Our philosophy is not to be on the bleeding edge of technology but to implement those projects that we think suit our needs on a cost-benefit basis," he says.

TEAM SPIRIT

That philosophy also guides the IS efforts at Champion Home Builders, a division of Champion Enterprises, Inc. But unlike Cooper, Champion competes in the roller-coaster industry of manufactured housing. "Our industry is so volatile that if a project will take more than a year to achieve return on investment, we probably won't tackle it," says Dave Waters, director of MIS at the Auburn Hills, Mich., company. "We don't want to get caught in a project where the needs will change in six to eight months."

Instead, Waters' staff spends most of its time on day-to-day operations, supporting 12 divisions across the country. That's hard enough for only five people with an $800,000 annual budget. Now add the fact that Champion has been acquiring companies and growing sales in its core business at nearly 50% a year and Waters' staff could easily be stretched to the breaking point.

That hasn't happened, though, for two critical reasons. First, the small IS staff works as closely as a team can possibly work. They are cross-trained in one another's disciplines, pitching in when a colleague needs help. Second, and possibly more important: The five people are intimately familiar with Champion's businesses.

For example, "The person who does all of our networking also happens to be extremely interested in the manufacturing process," Waters says. "He helped develop the purchasing and inventory systems across divisions."

Such a tight coupling has paid off. "They have all spent time visiting our manufacturing facilities, talking to people on the floor, to sales managers and to materials managers," says Mike Getz, Champion's manager of cost analysis. "There's a strong rapport between IS, the divisions and corporate. They are viewed as real business partners."

LONG-TERM PLANS

At Caraustar Industries, Inc., Donald Newsom combines the long-term planning seen at Cooper with the team spirit displayed at Champion. But unlike those at the other corporations, this IS director seeks out new technologies whenever they seem appropriate to the business of manufacturing paperboard and other paper products.

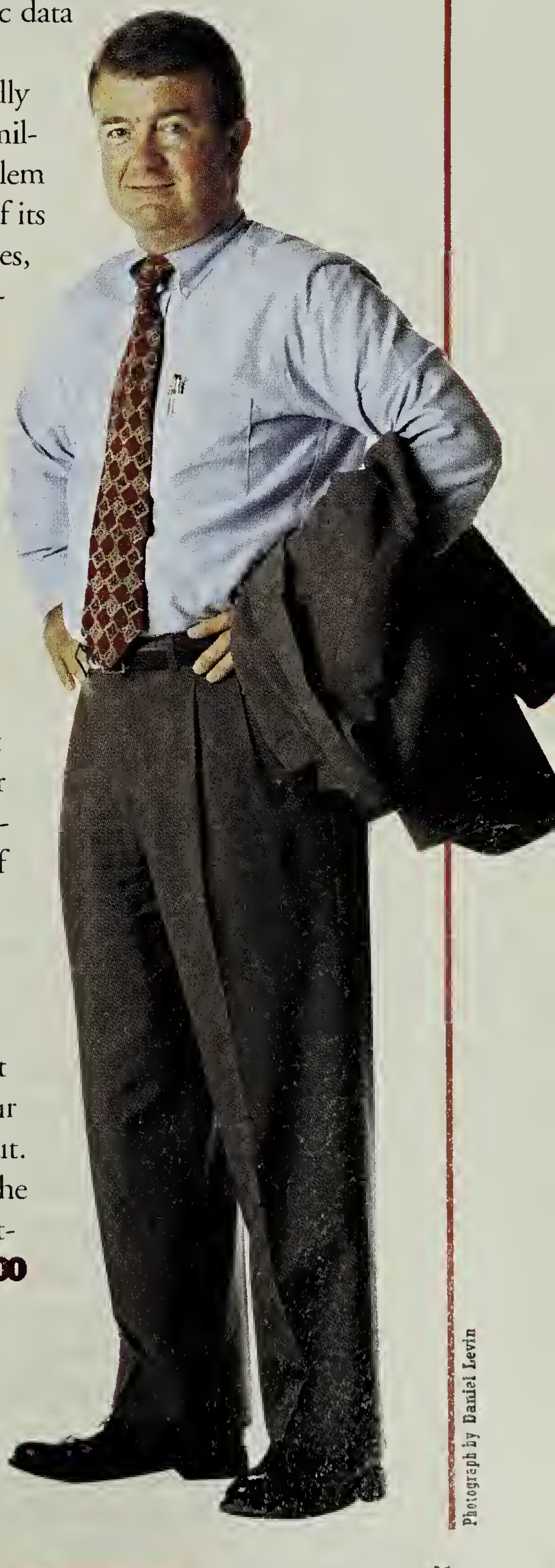
"I have one person working on a new billing order-entry system for our mill group and paper-stock group, someone else working on a similar system for our composite group and a third team that focuses on mill-floor applications, including bar coding and [electronic data interchange]," Newsom says.

Such development efforts naturally take a bite out of Newsom's $3.1 million budget, which can be a problem when Caraustar goes through one of its frequent acquisitions. In such cases, Newsom must find money to support new operations and users not previously built into the budget.

Like Mitchell at Cooper, Newsom must decide which projects deserve his staff's attention. "We used to put out a lot of fires, tried to make everyone happy," Newsom says. "Now we stay focused on the big projects."

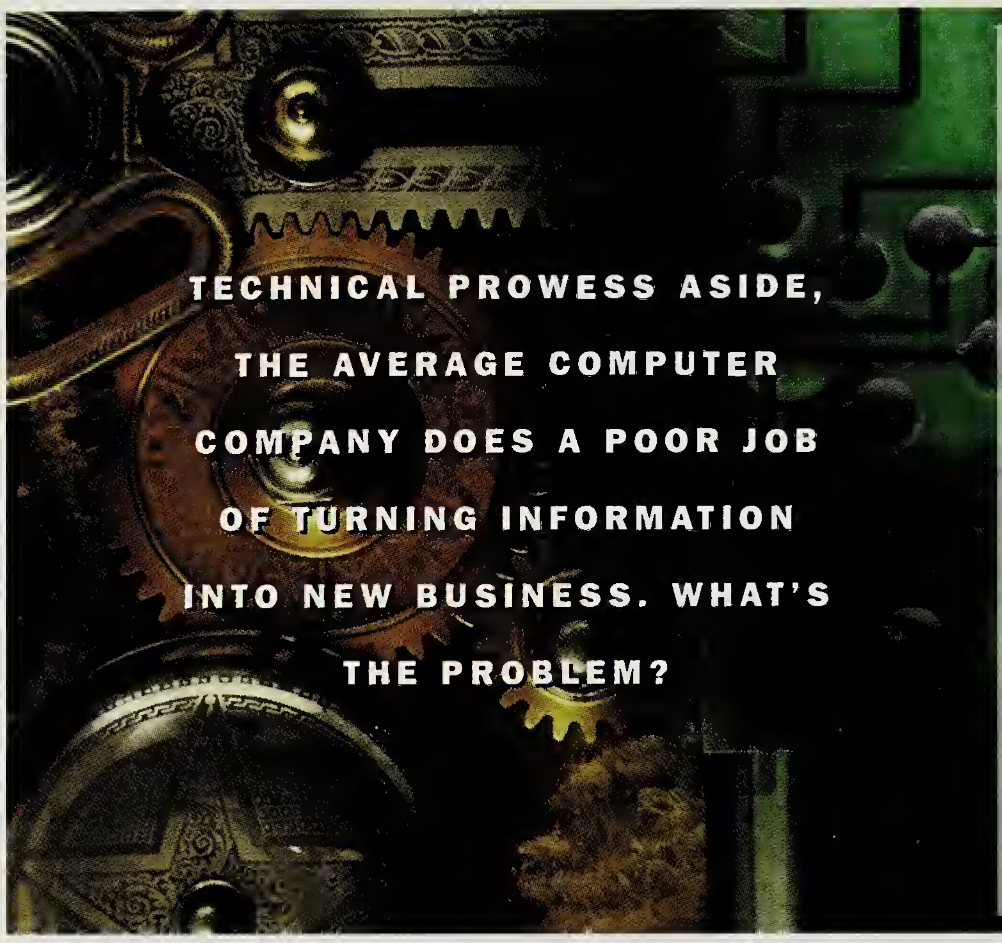
How does he know which projects will derive the most benefit? It helps that he's been with Caraustar for 20 years. In that time, he has developed a special understanding of the personalities, operational issues and business imperatives at Caraustar. The average tenure in Newsom's department is 10 years.

It just goes to show: If you want to stay lean, you'd better know your company's business inside and out. Only then can IS managers make the right choices of where to spend limited funds. **100**



JOHN MITCHELL, **Cooper's IS director, focuses on "best-return projects" and makes sure his staff maintains close ties with internal customers.**

Photograph by Daniel Levin



TECHNICAL PROWESS ASIDE, THE AVERAGE COMPUTER COMPANY DOES A POOR JOB OF TURNING INFORMATION INTO NEW BUSINESS. WHAT'S THE PROBLEM?

The High-Tech Top 10

Rank, Company	Information Productivity Index
1. Cisco Systems	.833
2. Gateway 2000	.754
3. Intel Corp.	.468
4. Cabletron	.412
5. Micron Technology	.341
6. Microsoft	.329
7. Newbridge	.305
8. EMC	.302
9. Adaptec	.201
10. Compaq	.155

Computer hardware, software and office equipment companies are excluded from the Premier 100 because of their unique position as developers of information systems and related technologies.

Source: *Computerworld* and Paul Strassmann

COMPUTER INDUSTRY

The Trouble With Technology

BY H. GARRETT DeYOUNG

EARLIER THIS YEAR, Gateway 2000, Inc. hit a speed bump on its road to riches.

Long considered one of the brightest stars in the direct-sales PC constellation, the North Sioux City, S.D.-based company found itself short on components and swamped with calls from service-starved customers. The reason was its own success: 1994 net sales hit $2.7 billion, contributing to a one-year revenue increase of more than $1 billion.

"We were receiving as many as 10,000 customer calls a day," recalls Vice President and chief financial officer David McKittrick, "but could handle only about 4,000. We didn't keep up with our growth."

The outcome was a series of blistering user messages splayed across the Internet, loss of more than half of the company's sales-related input and, "probably some lost business," McKittrick says.

Gateway has since upgraded its phone system, added several hundred staffers to field routine calls and opened a 500-person customer-service center in Kansas City. Although customers can still "get caught in the lines, Gateway has made significant progress," says James D. Poyner Jr., an analyst at Oppenheimer & Co. in New York.

Gateway's story illustrates how companies are working to capture and utilize the reams of information that are helping to boost overall productivity — and generate new business. But such an effort appears rare in the computer hardware, software and office equipment sector.

Computerworld excludes this class of company from the *Premier 100* list because they develop and sell information systems. Even so, few computer-related firms would make it onto the list. The exceptions are listed in the chart at the top of this page, ranked according to the Information Productivity Index (IPI), the formula *Computerworld*

Illustration by John Baxter

uses to rank the *Premier 100.*

Why do computer companies fare so poorly in information management? The industry's dependence on legacy systems is certainly one factor. Another factor is the rapid changes this industry faces. Of course, neither fully explains their lackluster performance.

One factor that seems to distinguish effective information management is dedication to customer service, says Paul Strassmann, the consultant who developed the IPI.

That may help explain the strength of Cisco Systems, Inc., the San Jose, Calif. supplier of internetworking products and services. Cisco's IPI of 0.83 puts it at the head of this year's list of computer suppliers and within the top 12% of the *Premier 100.*

SPEEDY TOOLS

Cisco relies on various IS tools to satisfy and respond to its customers, says Pamela George, a company spokesperson. Updated documentation on the company's products, for example, is routinely provided via CD-ROM rather than by printed media — a strategy that speeds up customer communications and cuts Cisco's documentation costs by 98%, George says.

Also, Cisco logs industry tradeshow inquiries into the company's headquarters and routes them to the appropriate salesperson via pop-up messages.

"We receive about 80,000 log-ins per month on Cisco Infor-mation On-line," says George. "That tells us where the interest is."

Emphasizing customer focus, of course, rings hollow unless the IS function is in step with the company's business objectives. At Santa Clara, Calif.-based Intel Corp., for example, top IS managers get down in the trenches with the troops — in particular, with the sales force.

"We are not spectators [to the sales process] but participants," insists Louis Burns, Intel's director of architecture and standards in Folsom, Calif. In addition to providing the sales and marketing departments with networking, laptops and other tools, Burns sometimes accompanies salespeople on calls to see firsthand "how they think and work," he says.

One result of Burns' observations is Intel's "sales libraries," which are databases that give salespeople instant server-based access to customer-specific product and pricing information.

How does an IS executive at the average high-tech company improve information productivity? One suggestion is to make sure that IS is not an island. The most effective IS executives move comfortably between functions, gathering information that helps develop systems that business units need. Gateway's McKittrick, for instance, is a former IS manager who can straddle both worlds.

"[IS technicians] must learn the business. And businesspeople need to learn about IS," agrees Michael Welts, marketing director at Cabletron Systems, Inc. Net income for the Rochester, N.H.-based supplier of network components grew from $83.5 million in fiscal '93 to $162 million in fiscal '95.

"In the future, the MIS director will be held directly accountable for how well IT is utilized, not merely for observing a budget," he says. **100**

DeYoung is a freelance writer based in Scituate, Mass.

Big Blue's Information Re-engineering

IBM's PROMISING SECOND-QUARTER PROFIT of $1.3 billion, a 295% jump from the same period last year, suggests that the world's largest computer company may have finally left some of its performance problems behind.

Not everyone was impressed, however. "It remains an open question as to how IBM can do in a less favorable [economy]," notes one New York analyst.

Looking to the future, the important thing is how IBM plans to use its information resources to generate business and satisfy its customers, says Paul Strassmann, who developed the Information Productivity Index formula that *Computerworld* uses to rank the *Premier 100.*

"We have a lot of data, but not necessarily a lot of good information," admits Lorraine Fenton, vice president of quality and IT for IBM/U.S. in White Plains, N.Y. "We haven't fully leveraged [our information] resources."

That's something of an understatement. In times past, Fenton says, IBM staffers often spent an inordinate amount of time looking for information such as customer preferences and complaints. "We didn't know who owned the [internal] information," she says.

Poor productivity

IBM'S VITAL STATISTICS

3-year IPI	**-0.23**
Revenue growth 1992-1994	**0.4%**
Net income 1994	**$3M**
Net income 1992	**-$5M**

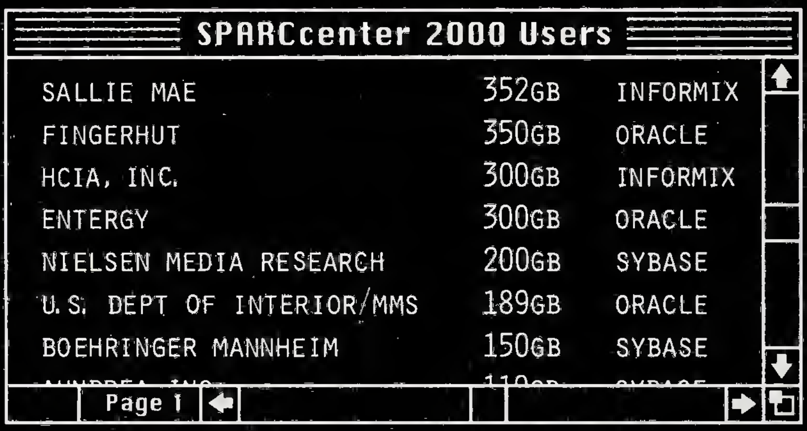
Source: *Computerworld* and company reports

IBM now is implementing an information re-engineering process designed to help gather and use the accumulated data, studies and reports needed to support its business units. The company is also establishing ownership of specialized information—that is, charging responsibility for maintaining relevant databases. Also in the works: a series of client/server tools designed to quickly get the information where it's needed.

Fenton claims that it's still too early to assess how any of this will actually change IBM's information flow, and in turn, its IPI. Specific database and networking tools are still being selected, she says, and the company has yet to design a set of metrics to gauge the ultimate effectiveness of the re-engineering initiative.

— H. Garrett DeYoung

SOME COMPANIES ADD SERVERS.



SPARCcenter 2000 Users

SALLIE MAE	352GB	INFORMIX
FINGERHUT	350GB	ORACLE
HCIA, INC.	300GB	INFORMIX
ENTERGY	300GB	ORACLE
NIELSEN MEDIA RESEARCH	200GB	SYBASE
U.S. DEPT OF INTERIOR/MMS	189GB	ORACLE
BOEHRINGER MANNHEIM	150GB	SYBASE

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The Premier 100

Premier 100 Ranking	Company	Industry	3-year Information Productivity Index 1992-1994	Total Revenue* ($ in millions)	Net Income* ($ in millions)	Total Number of Employees
1	Superior Industries International, Inc.	Transportation & Industrial Equip.	1.41	$456M	$56M	5,000
2	AES Corp.	Electric & Gas Services	1.26	$533M	$100M	680
3	Destec Energy, Inc.	Electric & Gas Services	1.01	$727M	$110M	703
4	UST, Inc.	Manufacturing	.98	$1,223M	$387M	2,000
5	Carnival Corp.	Recreational Products & Services	.94	$1,806M	$381M	15,000
6	Chase Brass & Copper Co.	Manufacturing	.93	$260M	$12M	270
7	United HealthCare Corp.	Health Services	.91	$3,768M	$1,665M	8,929
8	California Energy Co.	Electric & Gas Services	.91	$154M	$36M	275
9	Outback Steakhouse, Inc.	Food Services	.91	$451M	$39M	2,620
10	Alza Corp.	Pharmaceuticals	.84	$260M	$58M	1,078
11	Mercury Finance Co.	Financial Services	.84	$252M	$86M	650
12	Arnold Industries, Inc.	Transportation Services	.83	$302M	$30M	1,800
13	King World Productions, Inc.	Recreational Products & Services	.82	$480M	$88M	235
14	Adams Resources & Energy, Inc.	Manufacturing	.80	$634M	$3M	377
15	Western National Corp.	Financial Services	.79	$615M	$73M	201
16	International Game Technology	Manufacturing	.77	$674M	$140M	2,500
17	U.S. Healthcare, Inc.	Health Services	.77	$2,974M	$391M	3,900
18	John Nuveen Co.	Financial Services	.76	$220M	$58M	561
19	Medusa Corp.	Manufacturing	.67	$276M	$29M	1,238
20	BMC Industries, Inc.	Electronic & Electric Equipment	.66	$219M	$14M	2,000
21	Louisiana-Pacific Corp.	Paper & Paperboard	.63	$3,039M	$346M	11,500
22	Illinois Central Corp.	Transportation Services	.62	$593 M	$113M	3,164
23	Wabash National Corp.	Transportation & Industrial Equip.	.61	$561M	$23M	2,400
24	Green Tree Financial Corp.	Financial Services	.60	$497M	$181M	2,000
25	Wausau Paper Mills Co.	Paper & Paperboard	.57	$426M	$43M	1,700

Total Number of IS Employees (Range)	Total IS Budget 1995 (Range)	Percent Change In IS Budget '94-'95	Client/Server		Outsourcing		Percent of IS Budget Managed By		
			Percent of IS Budget	Percent Change '94-'95	Percent of IS Budget	Percent Change '94-'95	Corporate IS Managers	Business Unit IS Managers	Business/ Non-IS Managers
< 100	$1M - $4.9M	25%	NA	NA	0%	-100%	100%	0%	0%
< 100	< $1M	0%	0%	0%	0%	0%	20%	0%	80%
< 100	$1M - $4.9M	-45%	3%	-60%	3%	-40%	95%	3%	2%
< 100	$10M - $24.9M	14%	1%	10%	3%	0%	95%	5%	0%
100-249	$10M - $24.9M	5%	15%	5%	5%	75%	100%	0%	0%
< 100	< $1M	52%	4%	4%	50%	56%	100%	0%	0%
500-999	$100M - $249.9M	14%	25%	15%	2%	10%	75%	25%	0%
< 100	$1M - $4.9M	15%	0%	0%	0%	0%	90%	5%	5%
< 100	< $1M	25%	58%	30%	42%	0%	60%	10%	30%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	< $1M	0%	50%	0%	NA	NA	50%	50%	0%
< 100	< $1M	20%	20%	40%	5%	10%	90%	0%	10%
< 100	$1M - $4.9M	36%	48%	35%	0%	0%	100%	0%	0%
< 100	$5M - $9.9M	-8%	10%	15%	3%	5%	72%	28%	0%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	$5M - $9.9M	13%	50%	13%	0.1%	20%	33%	33%	34%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	< $1M	-30%	10%	-10%	10%	-50%	50%	25%	25%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	$10M - $24.9M	0%	0%	0%	25%	20%	100%	0%	0%
< 100	< $1M	20%	20%	50%	5%	0%	100%	0%	0%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	$1M - $4.9M	7%	10%	0%	2%	0%	60%	20%	20%

NA = Not available   *Most recent fiscal year available

Illustration by Joe Fleming

The Premier 100

Premier 100 Ranking	Company	Industry	3-year Information Productivity Index 1992-1994	Total Revenue* ($ in millions)	Net Income* ($ in millions)	Total Number of Employees
26	Great Lakes Chemical Corp.	Chemical Manufacturing	.56	$2,065M	$278M	8,000
27	Mylan Laboratories, Inc.	Pharmaceuticals	.56	$251M	$73M	1,230
28	HealthCare Compare Corp.	Diversified Services	.55	$186M	$50M	1,499
29	Morgan Keegan, Inc.	Financial Services	.55	$231M	$31M	1,028
30	Clark Equipment Co.	Transportation & Industrial Equip.	.54	$946M	$161M	4,410
31	Topps Co.	Recreational Products & Services	.52	$268M	$26M	1,200
32	Galey & Lord, Inc.	Apparel, Textile & Furniture	.52	$451M	$17M	4,100
33	The Bear Sterns Cos.	Financial Services	.44	$3,441M	$386M	7,417
34	Caraustar Industries, Inc.	Paper & Paperboard	.44	$456M	$35M	3,040
35	International Dairy Queen, Inc.	Food Services	.44	$340M	$31M	447
36	Cooper Tire & Rubber Co.	Transportation & Industrial Equip.	.43	$1,403M	$128M	7,800
37	Marvel Entertainment Group, Inc.	Printing & Publishing	.43	$514M	$61M	278
38	The Equitable of Iowa Cos.	Financial Services	.42	$651M	$98M	497
39	Southern Energy Homes, Inc.	Manufacturing	.42	$188M	$8M	1,696
40	Amgen, Inc.	Pharmaceuticals	.41	$1,549M	$319M	2,725
41	TBC Corp.	Wholesale/Retail	.40	$551M	$19M	240
42	WMS Industries, Inc.	Manufacturing	.40	$358M	$28M	2,080
43	Boston BanCorp	Financial Services	.40	$147M	$24M	200
44	Breed Technologies, Inc.	Transportation & Industrial Equip.	.40	$277M	$47M	5,000
45	Fossil, Inc.	Manufacturing	.39	$161M	$15M	260
46	First Data Corp.	Diversified Services	.36	$1,471M	$208M	13,300
47	Kinetic Concepts, Inc.	Diversified Services	.34	$269M	$64M	1,956
48	Abbott Laboratories	Pharmaceuticals	.34	$9,156M	$1,516M	49,464
49	International Flavors & Fragrances, Inc.	Manufacturing	.34	$1,315M	$226M	1,300
50	Merck & Co.	Pharmaceuticals	.34	$14,969M	$2,997M	47,100

Total Number of IS Employees (Range)	Total IS Budget 1995 (Range)	Percent Change In IS Budget '94-'95	Client/Server		Outsourcing		Percent of IS Budget Managed By		
			Percent of IS Budget	Percent Change '94-'95	Percent of IS Budget	Percent Change '94-'95	Corporate IS Managers	Business Unit IS Managers	Business/ Non-IS Managers
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,000 - 2,499	$10M - $24.9M	9%	40%	30%	0%	0%	100%	0%	0%
< 100	$1M - $4.9M	13%	15%	100%	20%	0%	100%	0%	0%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	*NA
< 100	$1M - $4.9M	3%	5%	80%	1%	0%	90%	5%	5%
500 - 999	$100M - $249.9M	7%	17%	34%	3%	2%	100%	0%	0%
< 100	$1M - $4.9M	12%	20%	50%	0%	0%	70%	0%	30%
< 100	$1M - $4.9M	27%	38%	0%	0%	0%	100%	0%	0%
100 - 249	$10M - $24.9M	7%	20%	100%	5%	25%	60%	35%	5%
< 100	NA	25%	33%	80%	33%	-50%	60%	30%	10%
< 100	$5M - 9.9M	10%	35%	20%	0%	0%	100%	0%	0%
< 100	> 1M	50%	23%	50%	0%	NA	80%	10%	10%
100 - 249	$50M - $99.9M	45%	3%	25%	5%	50%	50%	0%	50%
< 100	$1M - $4.9M	5%	0%	0%	1%	0%	100%	0%	0%
< 100	$1M - $4.9M	5%	3%	100%	2%	80%	100%	0%	0%
< 100	$1M - $4.9M	7%	17%	43%	84%	0%	100%	0%	0%
< 100	$1M - $4.9M	6%	10%	0%	10%	-10%	85%	10%	5%
< 100	$1M - $4.9M	25%	1%	100%	10%	100%	25%	35%	40%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	$5M - $9.9M	50%	40%	100%	0%	0%	90%	0%	10%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	$5M - $9.9M	5%	40%	12%	5%	NA	90%	0%	10%
500 - 999	$100M - $249.9M	16%	39%	14%	16%	9%	55%	42%	3%

NA = Not available *Most recent fiscal year available

The Premier 100

Premier 100 Ranking	Company	Industry	3-year Information Productivity Index 1992-1994	Total Revenue* ($ in millions)	Net Income* ($ in millions)	Total Number of Employees
51	A.G. Edwards, Inc.	Financial Services	.32	$1,278M	$154M	10,206
52	CBS, Inc.	Diversified Services	.32	$3,711M	$281M	6,000
53	CMI Corp.	Manufacturing	.32	$128M	$22M	750
54	Electroglas, Inc.	Manufacturing	.31	$112M	$22M	450
55	T. Rowe Price Associates, Inc.	Financial Services	.31	$382M	$61M	1,927
56	Arrow International, Inc.	Manufacturing	.30	$178M	$28M	1,500
57	American Home Products Corp.	Pharmaceuticals	.29	$8,966M	$1,528M	74,009
58	Valley National Bancorp	Financial Services	.29	$265M	$59M	1,168
59	Morgan Stanley Group, Inc.	Financial Services	.29	$9,176M	$786M	7,000
60	Health Management Associates, Inc.	Health Services	.29	$438M	$46M	4,000
61	The Coca Cola Co.	Food & Beverage	.28	$16,172M	$2,554M	31,300
62	Worthington Industries, Inc.	Manufacturing	.28	$1,285M	$84M	7,200
63	Ethyl Corp.	Chemical Manufacturing	.27	$1,174M	$97M	1,800
64	Norfolk Southern Corp.	Transportation Services	.27	$4,581M	$667M	30,135
65	Masland Industries	Transportation & Industrial Equip.	.27	$429M	$21M	3,000
66	Progressive Corp.	Financial Services	.27	$2,415M	$274M	6,600
67	Schering-Plough Corp.	Pharmaceuticals	.27	$4,657M	$922M	21,600
68	The Charles Schwab Corp.	Financial Services	.26	$1,064M	$135M	5,904
69	Nine West Group, Inc.	Wholesale/Retail	.26	$652M	$63M	4,500
70	Vicor Corp.	Electronic & Electric Equipment	.24	$115M	$22M	684
71	Gannett Co.	Printing & Publishing	.23	$3,824M	$465M	36,700
72	Charter One Financial, Inc.	Financial Services	.23	$423M	$67M	1,403
73	Vencor, Inc.	Health Services	.23	$396M	$31M	7,000
74	Chromocraft Revington, Inc.	Apparel, Textile & Furniture	.23	$134M	$11M	1,300
75	Express Scripts, Inc.	Health Services	.23	$384M	$12M	1,027

Total Number of IS Employees (Range)	Total IS Budget 1995 (Range)	Percent Change In IS Budget '94-'95	Client/Server		Outsourcing		Percent of IS Budget Managed By		
			Percent of IS Budget	Percent Change '94-'95	Percent of IS Budget	Percent Change '94-'95	Corporate IS Managers	Business Unit IS Managers	Business/ Non-IS Managers
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
100 - 249	NA	-2.3%	10%	100%	NA	NA	100%	0%	0%
< 100	$1M - $4.9M	20%	25%	75%	0%	0%	100%	0%	0%
< 100	< $1M	15%	5%	25%	7%	30%	90%	10%	0%
100 - 249	$25M - $49.9M	29%	33%	34%	8%	24%	73%	14%	13%
< 100	$1M - $4.9M	0%	0%	0%	0%	0%	50%	0%	50%
1,000 - 2,499	$100M - $249.9M	7.5%	7%	20%	5%	0%	15%	75%	10%
< 100	NA	15%	NA	0%	NA	0%	80%	15%	5%
5000+	> $500M	15%	25%	30%	8%	10%	50%	0%	50%
< 100	$1M - $4.9M	6%	30%	10%	NA	NA	80%	20%	0%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	$5M - $9.9M	0%	90%	1000%	NA	1000%	100%	0%	0%
250 - 499	$50M - $99.9M	10%	5%	50%	5%	10%	30%	60%	10%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
500 - 999	$50M - $99.9M	24%	26%	70%	8%	0%	90%	10%	0%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
500 - 999	$100M - $249.9M	30%	20%	25%	NA	NA	100%	0%	0%
< 100	$5M - $9.9M	15%	15%	50%	0%	0%	100%	0%	0%
< 100	$1M - $4.9M	30%	20%	80%	0%	0%	100%	0%	0%
500 - 999	$50M - $99.9M	5%	5%	50%	2%	-7%	25%	50%	25%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	$25M - $49.9M	20%	14%	50%	50%	25%	75%	0%	25%
< 100	$1M - $4.9M	-10%	20%	0%	20%	-20%	100%	0%	0%
< 100	$10M - $24.9M	30%	40%	50%	20%	20%	60%	40%	0%

NA = Not available *Most recent fiscal year available

The Premier 100

Premier 100 Ranking	Company	Industry	3-year Information Productivity Index 1992-1994	Total Revenue* ($ in millions)	Net Income* ($ in millions)	Total Number of Employees
76	Rubbermaid, Inc.	Manufacturing	.22	$2,169M	$228M	13,000
77	Ellett Brothers, Inc.	Wholesale/Retail	.22	$160M	$6M	260
78	Bristol-Myers Squibb Co.	Pharmaceuticals	.22	$11,984M	$1,842M	47,700
79	Wm. Wrigley Jr. Co.	Food & Beverage	.21	$1,596M	$230M	6,700
80	St. John Knits, Inc.	Apparel, Textile & Furniture	.21	$127M	$14M	2,500
81	Equifax, Inc.	Diversified Services	.20	$1,421M	$120M	12,000
82	Martin Marietta Materials, Inc.	Manufacturing	.20	$501M	$58M	3,000
83	Cagles', Inc.	Food & Beverage	.18	$312M	$8M	3,200
84	Stewart & Stevenson Services, Inc.	Transportation & Industrial Equip.	.18	$1,138M	$67M	4,151
85	Champion Enterprises, Inc.	General Building Contractors	.18	$615M	$27M	3,925
86	Toll Brothers, Inc.	General Building Contractors	.18	$501M	$36M	1,000
87	Sunbeam-Oster Co.	Manufacturing	.18	$198M	$107M	1,400
88	Rollins Truck Leasing Corp.	Transportation Services	.17	$450M	$39M	2,550
89	McDonald's Corp.	Food Services	.17	$8,320M	$1,224M	86,174
90	Arthur J. Gallagher & Co.	Financial Services	.16	$356M	$34M	3,308
91	Solectron Corp.	Electronic & Electric Equipment	.15	$1,456M	$55M	3,600
92	Royal Caribbean Cruises Ltd.	Recreational Products & Services	.15	$1,171M	$136M	6,800
93	Supreme Industries, Inc.	Transportation & Industrial Equip.	.15	$136M	$5M	1,300
94	Anheuser-Busch Cos.	Food & Beverage	.15	$12,053M	$1,032M	43,345
95	ARCO Chemical Co.	Chemical Manufacturing	.14	$3,267M	$269M	3,400
96	Applebee's International, Inc.	Food Services	.13	$208M	$16M	8,700
97	Eli Lilly & Co.	Pharmaceuticals	.12	$5,711M	$1,286M	20,000
98	Swift Transportation Co.	Transportation Services	.11	$365M	$22M	2,100
99	Audiovox Corp.	Wholesale/Retail	.11	$486M	$26M	1,100
100	Campbell Soup Co.	Food & Beverage	.11	$6,690M	$630M	30,000

Total Number of IS Employees (Range)	Total IS Budget 1995 (Range)	Percent Change In IS Budget '94-'95	Client/Server		Outsourcing		Percent of IS Budget Managed By		
			Percent of IS Budget	Percent Change '94-'95	Percent of IS Budget	Percent Change '94-'95	Corporate IS Managers	Business Unit IS Managers	Business/ Non-IS Managers
100 - 249	NA	14%	1%	10%	10%	30%	50%	48%	2%
< 100	$1M - $4.9M	15%	20%	25%	5%	0%	90%	0%	10%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	$10M - $24.9M	9%	6%	50%	1%	24%	78%	12%	10%
< 100	$1M - $4.9M	19%	12%	80%	15%	40%	90%	0%	10%
1,000 - 2,499	$100M - $249.9M	9%	8%	2%	42%	39%	0%	100%	0%
< 100	$1M - $4.9M	10%	5%	NA	NA	NA	100%	0%	0%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	$1M - $4.9M	0%	5%	5%	5%	0%	0%	100%	0%
< 100	< $1M	5%	15%	-30%	NA	70%	100%	0%	0%
< 100	$1M - $4.9M	70%	0%	0%	0%	0%	100%	0%	0%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
< 100	$1M - $4.9M	10%	16%	25%	4%	-1%	100%	0%	0%
250 - 499	$50M - $99.9M	13%	6%	80%	4%	4%	100%	0%	0%
100 - 249	$10M - $24.9M	0%	30%	10%	20%	10%	20%	50%	30%
< 100	$10M - $24.9M	30%	60%	80%	5%	80%	80%	20%	0%
< 100	$10M - $24.9M	NA	5%	25%	0%	0%	100%	0%	0%
< 100	< $1M	0%	0%	0%	2.5%	0%	92%	0%	8%
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
100 - 249	$10M - $24.9M	0%	10%	25%	5%	0%	100%	0%	0%
< 100	$1M - $4.9M	20%	40%	50%	NA	0%	100%	0%	0%
500 - 999	$250M - $499.9M	2.5%	3%	40%	0%	0%	80%	15%	5%
< 100	$1M - $4.9M	0%	10%	0%	90%	20%	100%	0%	0%
< 100	$1M - $4.9M	5%	20%	5%	10%	5%	100%	0%	0%
250 - 499	$100M - $249.9M	20%	40%	100%	40%	300%	75%	20%	5%

NA = Not available   *Most recent fiscal year available

COMMENTARY

THE INFORMATION PRODUCTIVITY INDEX MEASURES HOW WELL A COMPANY MANAGES INFORMATION. BUT NO MATTER WHAT YOUR IPI, YOU CAN ALWAYS

Keep improving

BY PAUL A. STRASSMANN

INFORMATION PRODUCTIVITY — your company's ability to manage information — is not based on the sophistication of your information systems organization. It is not affected by the kind of technology you have or how pervasive that technology is in your firm.

It is indifferent to whether you use mainframes or not. It certainly has no relation to the size of your information technology budget.

High information productivity can be found in organizations that have a balanced approach to management. IT is treated as an important contributor to achieving this balance but not more than that. These organizations deal with each function, including marketing, production, research, IT and administration, as equally important ingredients.

In an organic view of the enterprise, you can't afford to have any part cause malfunctions in other parts of the organization. Everybody depends on everybody else doing their respective job to create value. Productivity is the consequence of cooperation, integration, learning, shared accumulation of knowledge and clarity of goals and objectives. Without these attributes, even the most powerful supercomputer would be a wasted resource.

One of the fundamental principles of cybernetics is that overall performance of any system depends on how all its parts interact, not on how those parts work in isolation. When the efficiency of parts taken individually improves, it does not follow that the performance of the system as whole will get better. Enhancing an isolated business function to realize lower costs, improved efficiency or some other narrow functional objective such as modernization, may degrade overall results.

Photography by Stella Johnson

To increase your firm's information productivity, you must first identify which elements of its complex cybernetic interactions are defective. Here are some practical suggestions for IS managers:

1. Participate in the corporate planning and budgeting processes. These events are the only occasions when all the value-added creation elements that make up the information productivity ratio are open to negotiation.

2. Identify the major causes of value-detraction. Information productivity gains are realized much faster by eliminating the negative influences first rather than by initially focusing on new ventures or deploying the latest technology.

3. Start analyzing these deficiencies as if they were pathologies. Corporations, like people, suffer from diseases. They have asset sickness, experience marketing myopia, encounter broken engineering, suffer from congested overhead, become exposed to competitor bites or show customer-neglect afflictions. Each disease calls for a different remedy.

4. Become a valued member of the executive team that is assigned to restoring good business health. IT should be seen as part of a comprehensive solution, not somebody's idea of injecting the most recently advertised miracle drug.

If nothing else, begin to think holistically. It's not technology; it's how you manage technology with it that will improve your company's information productivity.

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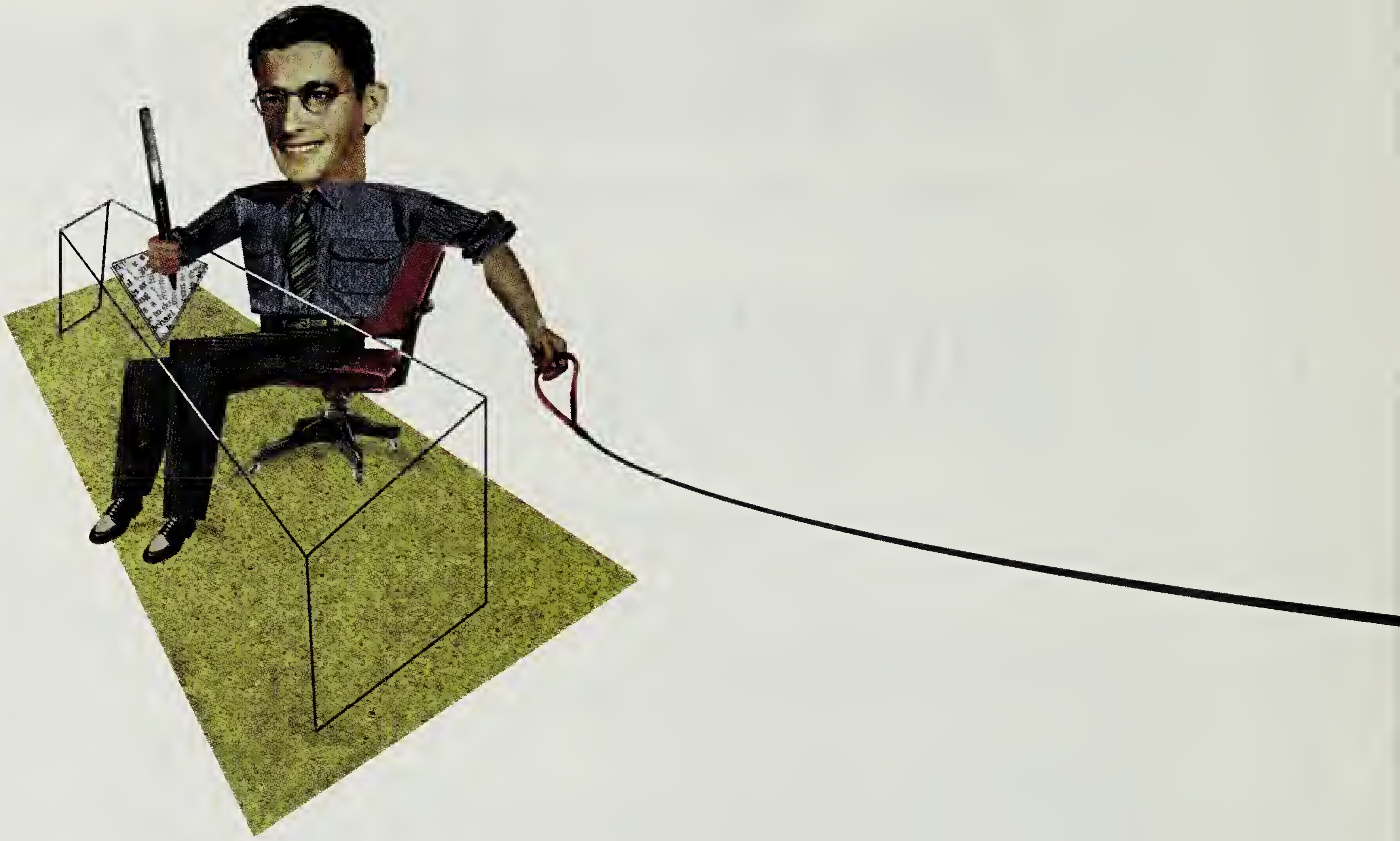

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